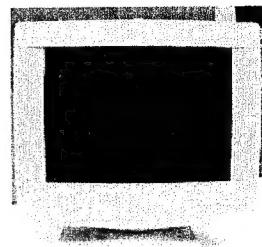


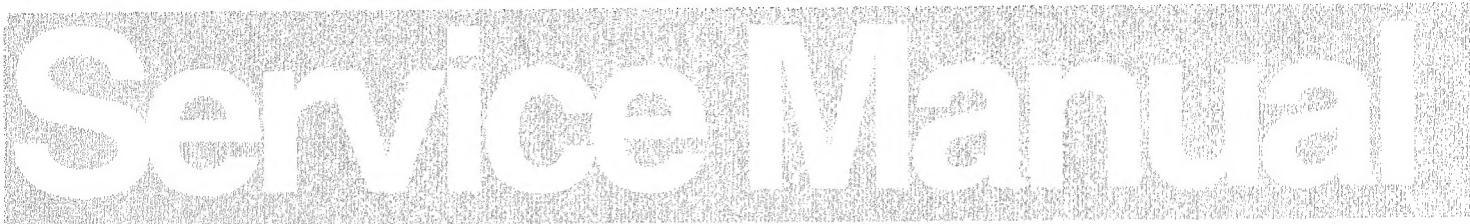
Service Service Service



21A582BH/00C



DDC/Audio/Power saving/Tilt correction



Horizontal frequencies
30 - 115 kHz

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REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.



PHILIPS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ▲ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design.
Servicer assumes all liability.

* Broken Line — ■ — ■ — ■ — ■ — ■

FOR PRODUCTS CONTAINING LASER :

DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

ty107a.chk

Normal Display, No stereo
Digital Separate Sync
Positive V Sync
Negative H Sync

Vendor/Product Identification

ID Manufacturer Name : PHL
ID Product Code : 1021
ID Serial Number : 123456
Week of Manufacture : 49
Year of Manufacture : 1997

EDID Version, Revision

Version : 1
Revision : 1

Basic Display Parameters/Features

Video Input Definition : Analog Video Input
0.700V/0.300V (1.00Vpp)
without Blank-to-Black Setup
Separate Sync
Composite Sync
Sync on Green
no Serration required

Maximum H Image Size : 38 cm
Maximum V Image Size : 29 cm
Display Transfer Characteristic: 2.800
(gamma)

Feature Support (DPMS) : Standby
Suspend
Active Off
RGB color display

Color Characteristics

Red X coordinate : 0.625
Red Y coordinate : 0.340
Green X coordinate : 0.285
Green Y coordinate : 0.605
Blue X coordinate : 0.150
Blue Y coordinate : 0.065
White X coordinate : 0.281
White Y coordinate : 0.311

Established Timings

Established Timings I : 640 x 480 @60Hz (VGA,IBM)
640 x 480 @75Hz (VESA)
Established Timings II : 800 x 600 @75Hz (VESA)
1024 x 768 @75Hz (VESA)
1280 x 1024 @75Hz (VESA)

Manufacturer's timings : 1152 x 870 @75Hz

(MacII,Apple)

Standard Timing Identification #1
Horizontal active pixels : 800
Aspect Ratio : 4:3
Refresh Rate : 85

Standard Timing Identification #2

Horizontal active pixels : 1024
Aspect Ratio : 4:3
Refresh Rate : 85

Standard Timing Identification #3

Horizontal active pixels : 1280
Aspect Ratio : 5:4
Refresh Rate : 85

Detailed Timing #1

Pixel Clock (MHz) : 25.170
H Active (pixels) : 640
H Blanking (pixels) : 160
V Active (lines) : 400
V Blanking (lines) : 49
H Sync Offset (F Porch) (pixels): 16
H Sync Pulse Width (pixels) : 96
V Sync Offset (F Porch) (lines): 12
V Sync Pulse Width (lines) : 2
H Image Size (mm) : 380
V Image Size (mm) : 285
H Border (pixels) : 8
V Border (lines) : 7
Flags : Non-interlaced
Normal Display, No stereo

Detailed Timing #2

Pixel Clock (MHz) : 108.000
H Active (pixels) : 1152
H Blanking (pixels) : 352
V Active (lines) : 900
V Blanking (lines) : 43
H Sync Offset (F Porch) (pixels): 16
H Sync Pulse Width (pixels) : 64
V Sync Offset (F Porch) (lines): 2
V Sync Pulse Width (lines) : 8
H Image Size (mm) : 380
V Image Size (mm) : 285
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
Normal Display, No stereo
Digital Separate Sync
Positive V Sync
Positive H Sync

Detailed Timing #3

Pixel Clock (MHz) : 229.500
H Active (pixels) : 1600
H Blanking (pixels) : 560
V Active (lines) : 1200
V Blanking (lines) : 50
H Sync Offset (F Porch) (pixels): 64
H Sync Pulse Width (pixels) : 192
V Sync Offset (F Porch) (lines): 1
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 380
V Image Size (mm) : 285
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
Normal Display, No stereo
Digital Separate Sync
Positive V Sync
Positive H Sync

Detailed Timing #4

Pixel Clock (MHz) : 256.140
H Active (pixels) : 1800
H Blanking (pixels) : 629
V Active (lines) : 1350
V Blanking (lines) : 56
H Sync Offset (F Porch) (pixels): 133
H Sync Pulse Width (pixels) : 192
V Sync Offset (F Porch) (lines): 7
V Sync Pulse Width (lines) : 3
H Image Size (mm) : 380
V Image Size (mm) : 285
H Border (pixels) : 0
V Border (lines) : 0
Flags : Non-interlaced
Normal Display, No stereo
Digital Separate Sync
Positive V Sync
Positive H Sync

Extension Flag : 0

Check sum : 74(lex)

Hex Data of DDC1/2B(107k)**For Hitachi CRT**

0: 0	1: ff	2: ff	3: ff	4: ff	5: ff	6: ff	7: 0
8: 41	9: c	10: 21	11: 10	12: 40	13: e2	14: 1	15: 0
16: 31	17: 7	18: 1	19: 1	20: e	21: 26	22: 1d	23: b4
24: e8	25: 0	26: b2	27: a0	28: 57	29: 49	30: 9b	31: 26
32: 10	33: 48	34: 4f	35: 24	36: 43	37: 80	38: 45	39: 59
40: 61	41: 59	42: 81	43: 99	44: 1	45: 1	46: 1	47: 1
48: 1	49: 1	50: 1	51: 1	52: 1	53: 1	54: d5	55: 9
56: 80	57: a0	58: 20	59: 90	60: 31	61: 10	62: 10	63: 60
64: c2	65: 0	66: 7c	67: 1d	68: 11	69: 8	70: 7	71: 1c
72: 30	73: 2a	74: 80	75: 60	76: 41	77: 84	78: 2b	79: 30
80: 10	81: 40	82: 28	83: 0	84: 7c	85: 1d	86: 11	87: 0
88: 0	89: 1e	90: a6	91: 59	92: 40	93: 30	94: 62	95: b0
96: 32	97: 40	98: 40	99: c0	100: 13	101: 0	102: 7c	103: 1d
104: 11	105: 0	106: 0	107: 1e	108: e	109: 64	110: 8	111: 75
112: 72	113: 46	114: 38	115: 50	116: 85	117: c0	118: 73	119: 0
120: 7c	121: 1d	122: 11	123: 0	124: 0	125: 1e	126: 0	127: 74

ty115new.chk	

Vendor/Product Identification	
ID Manufacturer Name	: PHL
ID Product Code	: 1121
ID Serial Number	: 123456
Week of Manufacture	: 49
Year of Manufacture	: 1997
EDID Version, Revision	
Version	: 1
Revision	: 1
Basic Display Parameters/Features	
Video Input Definition	: Analog Video Input 0.700V/0.300V (1.00Vpp) without Blank-to-Black Setup
Separate Sync	
Composite Sync	
Sync on Green	
no Serration required	
Maximum H Image Size	: 38 cm
Maximum V Image Size	: 29 cm
Display Transfer Characteristic:	2.800 (gamma)
Feature Support (DPMS)	: Standby Suspend Active Off RGB color display
Color Characteristics	
Red X coordinate	: 0.625
Red Y coordinate	: 0.340
Green X coordinate	: 0.285
Green Y coordinate	: 0.605
Blue X coordinate	: 0.150
Blue Y coordinate	: 0.065
White X coordinate	: 0.281
White Y coordinate	: 0.311
Established Timings	
Established Timings I	: 640 x 480 @ 60Hz (VGA,IBM) 640 x 480 @ 75Hz (VESA)
Established timings II	: 800 x 600 @ 75Hz (VESA) 1024 x 768 @ 75Hz (VESA) 1280 x 1024 @ 75Hz (VESA)
Manufacturer's timings	: 1152 x 870 @ 75Hz (MacII,Apple)
Standard Timing Identification #1	
Horizontal active pixels	: 800
Aspect Ratio	: 4:3
Refresh Rate	: 85
Standard Timing Identification #2	
Horizontal active pixels	: 1024
Aspect Ratio	: 4:3
Refresh Rate	: 85
Standard Timing Identification #3	
Horizontal active pixels	: 1280
Aspect Ratio	: 5:4
Refresh Rate	: 85
Standard Timing Identification #4	
Horizontal active pixels	: 1600
Aspect Ratio	: 4:3
Refresh Rate	: 85
Detailed Timing #1	
Pixel Clock (MHz)	: 25.170
H Active (pixels)	: 640
H Blanking (pixels)	: 160
V Active (lines)	: 400
V Blanking (lines)	: 49
H Sync Offset (F Porch) (pixels):	16
H Sync Pulse Width (pixels)	: 96
V Sync Offset (F Porch) (lines):	12
V Sync Offset (F Porch) (lines):	12
V Sync Pulse Width (lines)	: 2
H Image Size (mm)	: 380
V Image Size (mm)	: 285
H Border (pixels)	: 8
V Border (lines)	: 7
Flags	: Non-interlaced Normal Display, No stereo Digital Separate Sync Positive V Sync Positive H Sync
Detailed Timing #2	
Pixel Clock (MHz)	: 108.000
H Active (pixels)	: 1152
H Blanking (pixels)	: 352
V Active (lines)	: 900
V Blanking (lines)	: 43
H Sync Offset (F Porch) (pixels):	16
H Sync Pulse Width (pixels)	: 64
V Sync Offset (F Porch) (lines):	2
V Sync Pulse Width (lines)	: 8
H Image Size (mm)	: 380
V Image Size (mm)	: 285
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced Normal Display, No stereo Digital Separate Sync Positive V Sync Positive H Sync
Detailed Timing #3	
Pixel Clock (MHz)	: 243.230
H Active (pixels)	: 1600
H Blanking (pixels)	: 562
V Active (lines)	: 1200
V Blanking (lines)	: 50
H Sync Offset (F Porch) (pixels):	66
H Sync Pulse Width (pixels)	: 192
V Sync Offset (F Porch) (lines):	1
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 380
V Image Size (mm)	: 285
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced Normal Display, No stereo Digital Separate Sync Positive V Sync Positive H Sync
Detailed Timing #4	
Pixel Clock (MHz)	: 256.140
H Active (pixels)	: 1800
H Blanking (pixels)	: 629
V Active (lines)	: 1350
V Blanking (lines)	: 56
H Sync Offset (F Porch) (pixels):	133
H Sync Pulse Width (pixels)	: 192
V Sync Offset (F Porch) (lines):	7
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 380
V Image Size (mm)	: 285
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced Normal Display, No stereo Digital Separate Sync Positive V Sync Positive H Sync
Extension Flag	: 0
Check sum	c(hex)

Hex Data of DDC1/2B (FOR 115K)

For Hitachi CRT

0: 0	1: ff	2: ff	3: ff	4: ff	5: ff	6: ff	7: 0
8: 41	9: c	10: 21	11: 11	12: 40	13: e2	14: 1	15: 0
16: 31	17: 7	18: 1	19: 1	20: e	21: 26	22: 1d	23: b4
24: e8	25: 0	26: b2	27: a0	28: 57	29: 49	30: 9b	31: 26
32: 10	33: 48	34: 4f	35: 24	36: 43	37: 80	38: 45	39: 59
40: 61	41: 59	42: 81	43: 99	44: a9	45: 59	46: 1	47: 1
48: 1	49: 1	50: 1	51: 1	52: 1	53: 1	54: d5	55: 9
56: 80	57: a0	58: 20	59: 90	60: 31	61: 10	62: 10	63: 60
64: c2	65: 0	66: 7c	67: 1d	68: 11	69: 8	70: 7	71: 1c
72: 30	73: 2a	74: 80	75: 60	76: 41	77: 84	78: 2b	79: 30
80: 10	81: 40	82: 28	83: 0	84: 7c	85: 1d	86: 11	87: 0
88: 0	89: 1e	90: 3	91: 5f	92: 40	93: 32	94: 62	95: b0
96: 32	97: 40	98: 42	99: c0	100: 13	101: 0	102: 7c	103: 1d
104: 11	105: 0	106: 0	107: 1e	108: e	109: 64	110: 8	111: 75
112: 72	113: 46	114: 38	115: 50	116: 85	117: c0	118: 73	119: 0
120: 7c	121: 1d	122: 11	123: 0	124: 0	125: 1e	126: 0	127: c

Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol .
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is **0 V** (after approximately 30 seconds).
3. **ESD**  All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten their life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the ground of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the AC Power voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles be worn when replacing the picture tube.
7. When making adjustments, use plastic rather than metal tools. This will prevent any short-circuit or the danger of a circuit becoming unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit, the picture tube is used as an integrated unit. Adjustment of this unit during repair is not recommended.
10. After repair, the wiring should be fastened in place with the cable clamps.

Notes

1. The direct voltages and waveforms are average voltages. They have been measured using the Service test software and under the following conditions :
 - Mode : 1024 * 768 (56.5kHz / 70Hz)
 - Signal pattern : grey scale
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

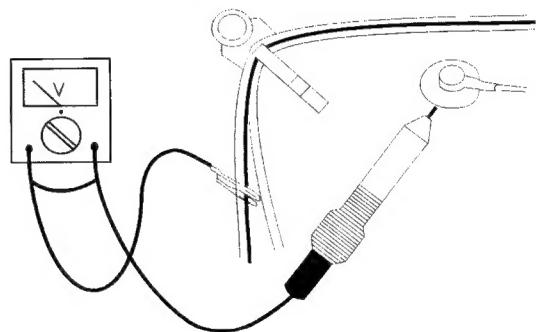


Fig.1

Electrical Adjustments (Continued)

CM5800 21A

9

7. Alignment of Vg2 cut-off point, white tracking (OSD control)

Equipment : 1. Video Test Generator-801GC (Quantum Data)
2. Color-analyzer (Minolta CA-100)

VG2 [(screen), at the bottom of the L.O.T.]

- * Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode, select the "full white pattern".
- * Use color-analyzer (Minolta CA-100) to adjust cutoff and white uniformity.

OSD R/G/B cut-off and R/G/B gain can be accessed, with initial data:

R cutoff = 30%, R gain = 70%
G cutoff = 30%, G gain = 70%
B cutoff = 30%, B gain = 70%

Step 1: To select the character "FACTORY MODE" as shown in Fig. 2.1, press "  " to access the OSD menu for R/G/B gain & cutoff as shown in Fig. 2.2.

Step 2: Use "  " to increase or decrease the value as shown in Fig. 2.3.

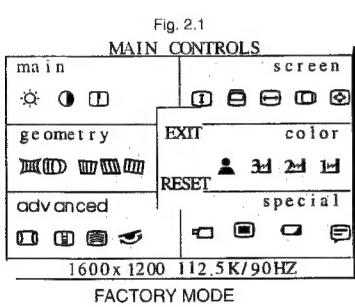


Fig. 2.2
FACTORY MODE

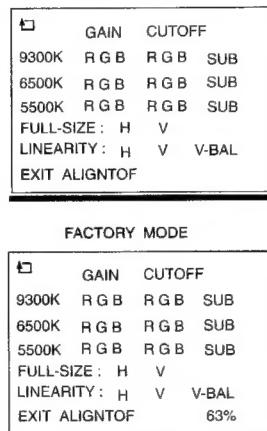


Fig. 2.3



7.1 Connect the video input, set brightness control at 50% and contrast at minimum position, Vg2 at Minimum (counter clockwise), and ABL (3647, potentiometer) at center position. Slowly increase Vg2 voltage until light output is at 0.17Ft-L +/- 0.05Ft-L (Y=0.17Ft-L, on the screen of CA-100) .

7.2 (The screen of monitor is dark now)

- : Press "  " to show the OSD menu as shown in Fig. 2.1.
- : Select the character "FACTORY MODE" to access the R/G/B adjustment as shown in Fig. 2.2 and Fig. 2.3.
- : Adjust the cutoff of R/G/B to get 9300K ($x=0.281 +/- 0.015, y=0.311 +/- 0.015$), and brightness output at $0.17 +/- 0.05$ Ft-L ($Y=0.17$ Ft-L).

7.3 : Press "  " to set contrast at maximum (100%).

- : Adjust gain of R/G/B to get 9300K ($x=0.281 +/- 0.015, y=0.311 +/- 0.015$, don't care about the Y value)

7.4 Apply a small white square 60 x 60 mm pattern, or 8% fill of full screen, brightness set to center (50%), and contrast at maximum (100%), adjust sub-contrast. control (OSD) to reach $32 +/- 2$ Ft-L.

7.5 : Select the 6500K colour temperature as shown in Fig. 2.2.

- : Adjust the R/G/B cutoff and R/G/B gain as shown in procedure 7.2~7.4 to get R/G/B cutoff $x=0.313 +/- 0.015$
 $y=0.329 +/- 0.015$
 $Y=0.17 +/- 0.05$ Ft-L
- R/G/B gain $x=0.313 +/- 0.015$
 $y=0.329 +/- 0.015$
 $Y=28 +/- 2$ Ft-L

7.6 : Select the 5500K colour temperature as shown in Fig. 2.2.
: Adjust the R/G/B cutoff & R/G/B gain as procedure 7.2~7.4

to get R/G/B cutoff	$x=0.332 +/- 0.015$
	$y=0.347 +/- 0.015$
	$Y=0.17 +/- 0.05$ Ft-L
R/G/B gain	$x=0.332 +/- 0.015$
	$y=0.347 +/- 0.015$
	$Y=25 +/- 2$ Ft-L

7.7 Apply full white pattern at 9300K, adjust ABL R3647 to reach $32 +/- 2$ Ft-L (21") (contrast at maximum, brightness at maxiaum).

8. Picture geometry setting (factory pre-set modes)

- Apply a video signal with cross-hatch pattern.
- Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.
- Set brightness and contrast controls to their center positions (OSD control).

8.1 Horizontal geometry (OSD control)

- Adjust the H-width to 380 mm (for 21" monitor).
- Adjust the H-phase to center position.

8.2 Vertical geometry (OSD control)

- Adjust vertical size to 285 mm (for 21" monitor).
- Adjust V-phase to center position.

8.3 Trapezoid distortion (OSD control)

- Adjust the trapezoid to get optimal vertical lines.

8.4 Pincushion (OSD control)

- Adjust the pincushion to get optimal vertical line.

8.5 Parallelogram (OSD control)

- Adjust parallelogram so that vertical lines are vertical or symmetrically about the center vertical axis.

8.6 Unbalance-pin (OSD control)

- Adjust the unbalance-pin so that that vertical border lines are aligned symmetrically.

8.7 Rotation (OSD control)

- Adjust picture so that vertical tilt is less than +/- 0.5mm.

8.8 Store the preset results by selecting the "exit" (OSD control).

8.9 Repeat the procedure 8.1 to 8.8 until all the preset timings have been adjusted completely

9. Focus adjustment

: Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.

- : Select " @ " pattern.
- : Set the brightness at center (50%) and the contrast at maximum (100%).
- : Adjust focus potentiometers (top of L.O.T.) Focus 1 for horizontal focus and Focus 2 for vertical focus so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

10. Loading DDC code

The DDC HEX data should be written into the DDC IC (7331) by EEPROM writer or equivalent method.

a: Service DDC Kit

DDC Module (DDC cable), Part number = 4822 320 1004

DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024

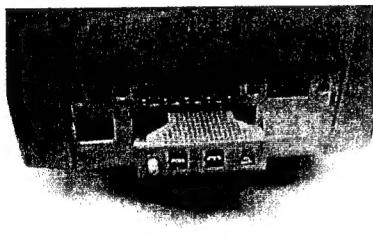
b: Please refer to Service information 4822 727 21995 for using the Service DDC Kit.

USB Connections

If you have Windows '95...

follow these steps to complete setting up your monitor.

1. Start Windows '95 and install CD ROM supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL".
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5.(a) If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box. and select CD-ROM drive
Or
- 5.(b) If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows'95 version is different or you need more detailed installation information, please refer to the windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

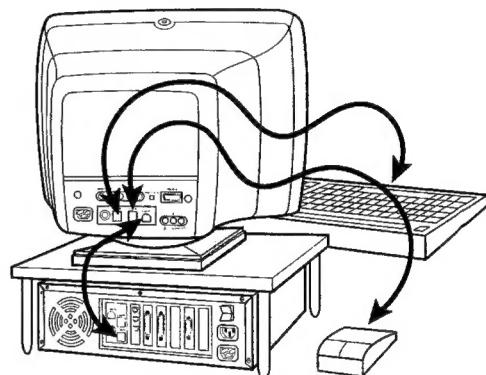


USB CONNECTIONS

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

1. Turn off the computer.
 2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
 3. Connect the power cable.
 4. Turn on the monitor. Then turn on the computer.
 5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.
- Note : USB Hub and cables sold separately. USB Bay exists in back of monitor.



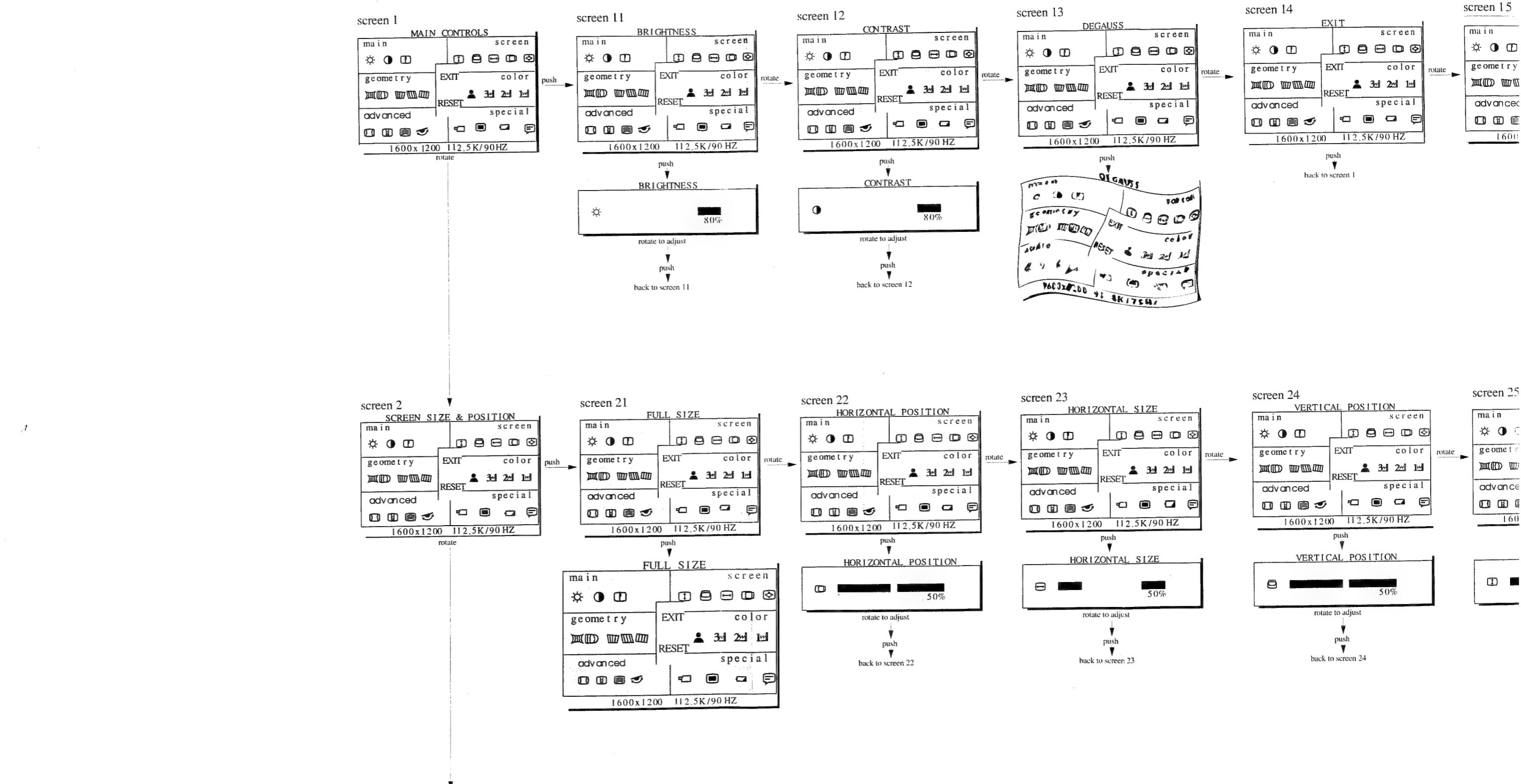
Use the information file (philips.inf) for Windows '95 (Philips Monitors-Driver Disk)

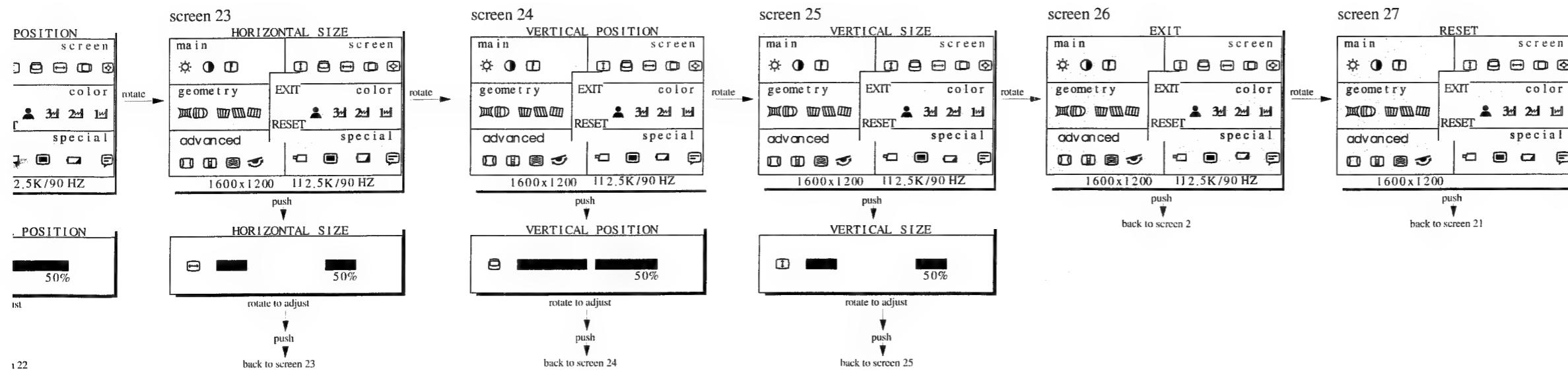
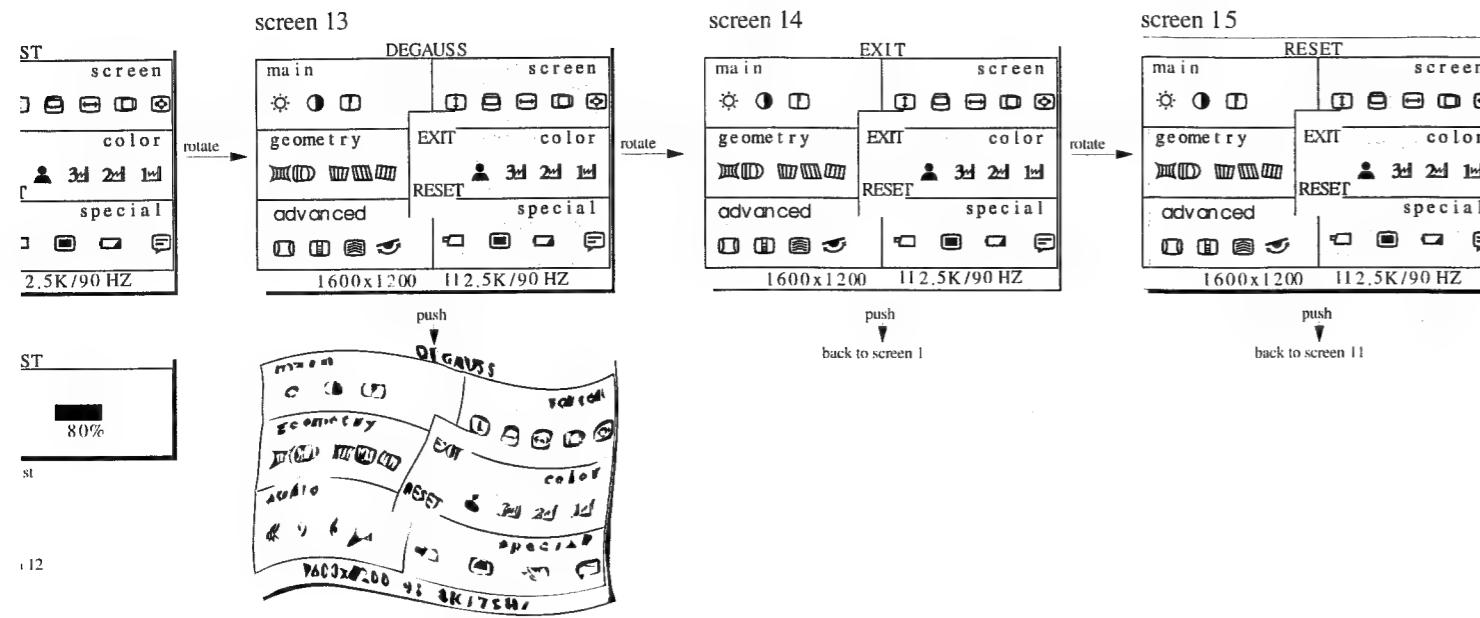
Philips' monitors build in VESA DDC1/2B feature to support Plug & Play requirement for Windows'95. You can install this information file (philips.inf) in order to select your Philips monitor from 'Monitor' dialog box in Windows 95 to activate Plug & Play application. The installation procedure based on Windows '95 OEM Release 2 is specified as follows,

1. Start Windows '95
2. Click the 'Start' button, point to 'Settings', and then click 'Control Panel'
3. Double-click the 'Display' icon, select the 'Settings' tab, then select "Advanced Properties" tab.
4. Select "Ok" in the "Install From Disk" dialog box.
5. Now, you can see the Philips monitor is appeared.
6. If the model name of Philips monitor is correct, click "Ok" tab in "Select Device" dialog box.
7. Then, click "Close" tab in "Advanced Properties" dialog box.
8. Now, you can select "Refresh Rate" to change monitor resolution

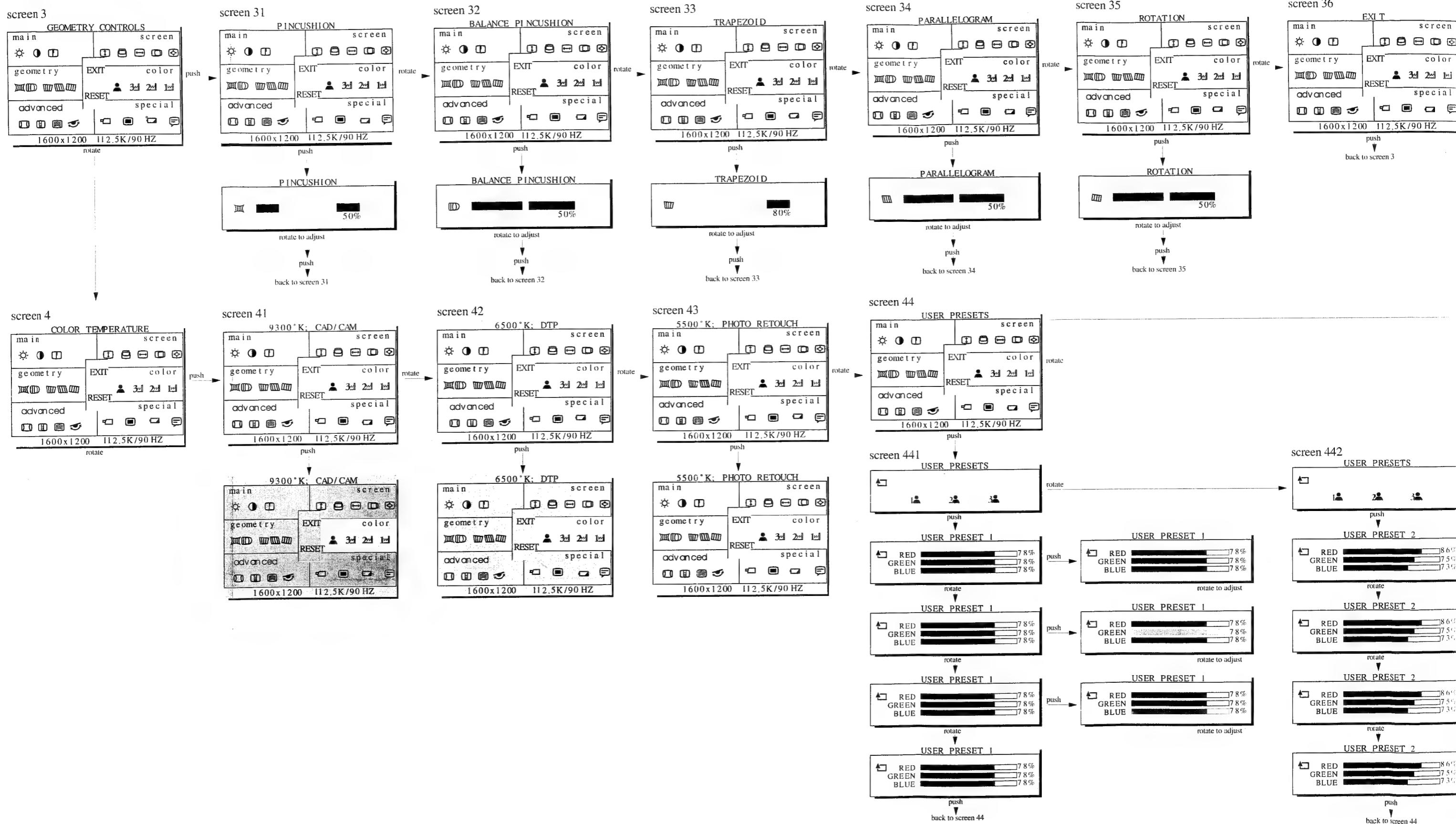
If your Windows'95 version is different or you need more detail installation information, please refer to Windows 95 user's manual.

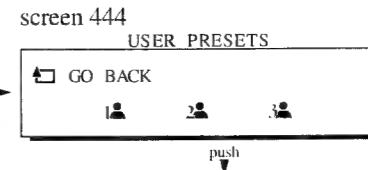
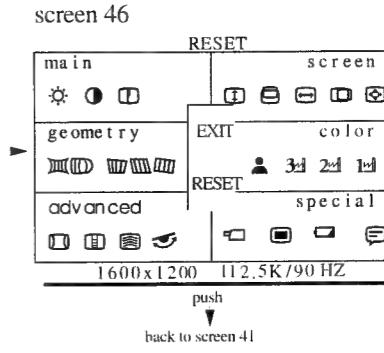
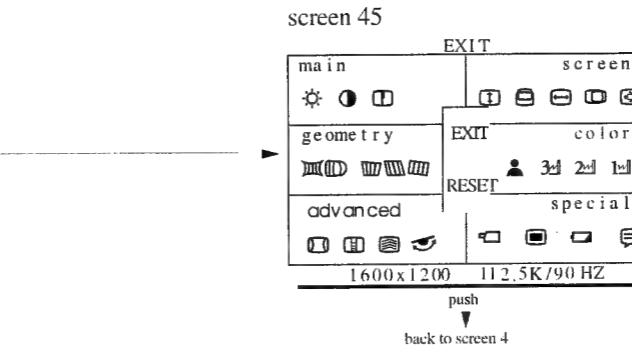
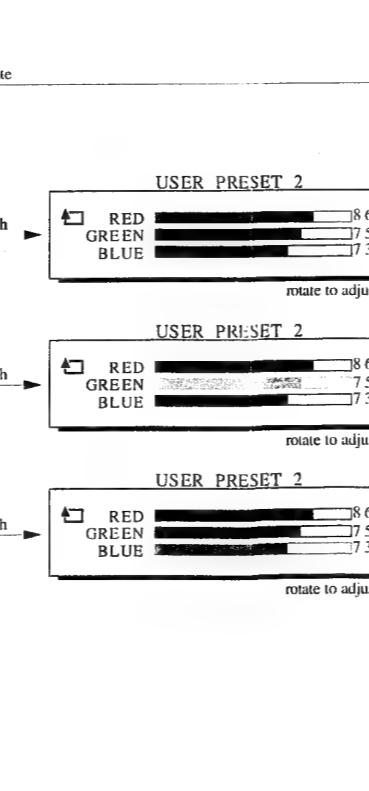
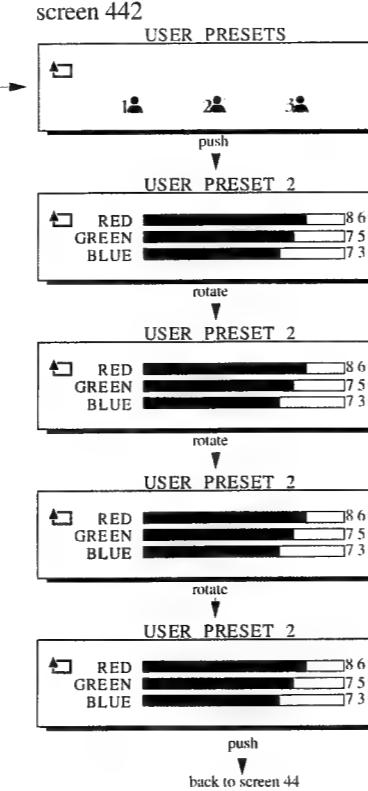
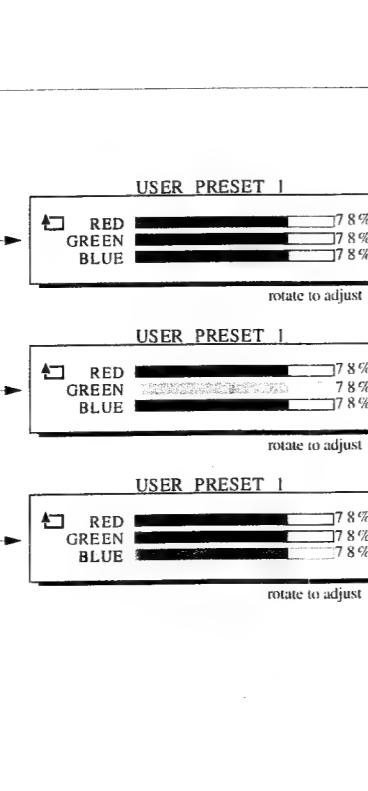
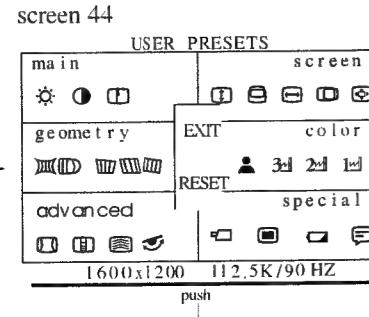
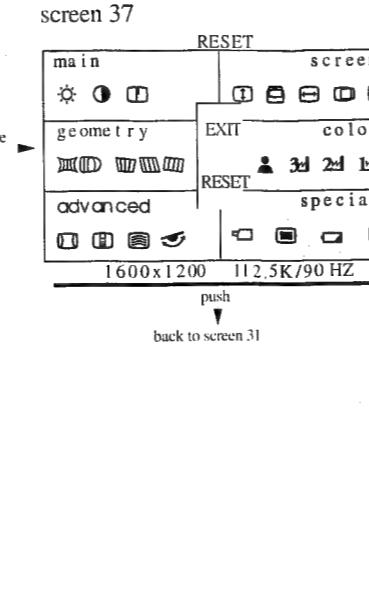
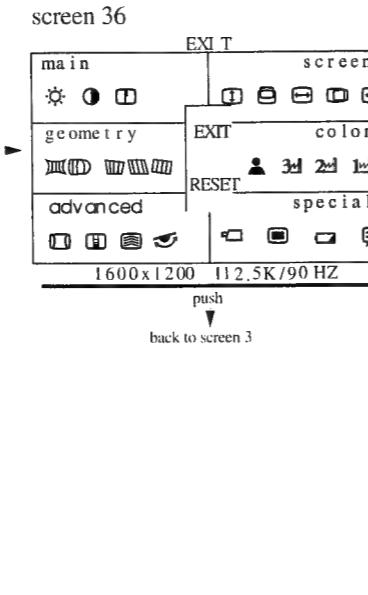
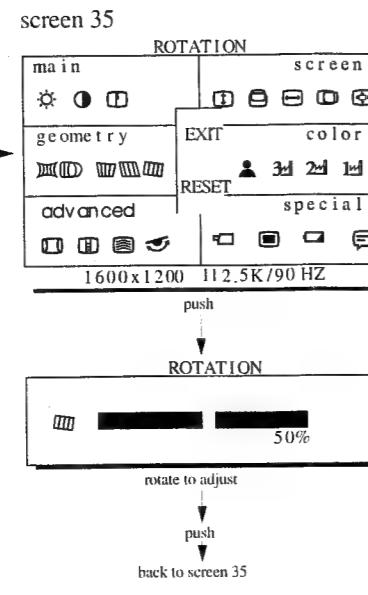
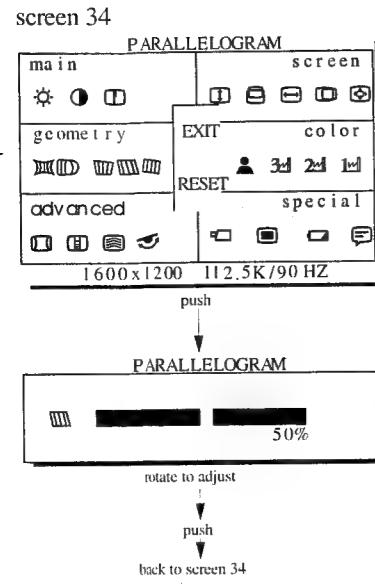
Quick Reference for OSD Adjustment

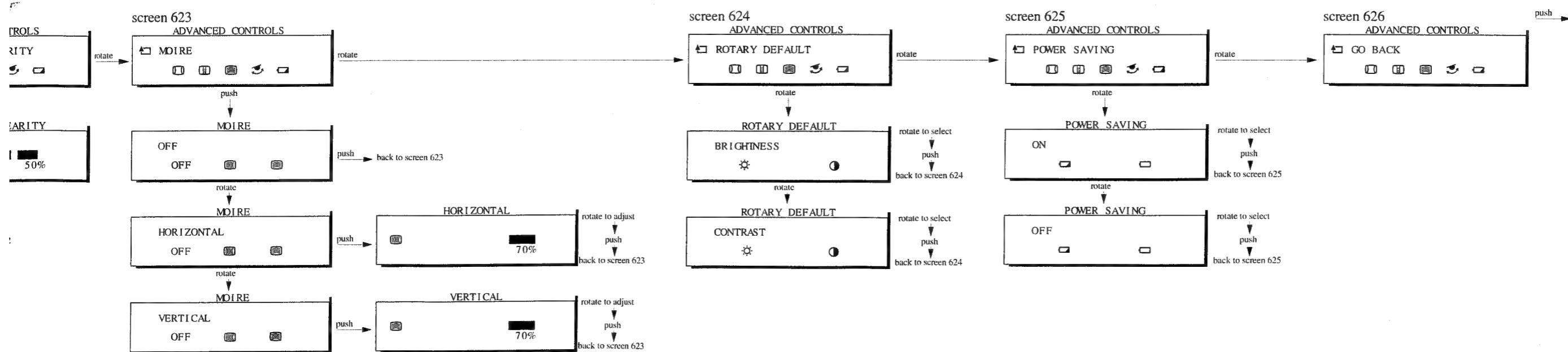
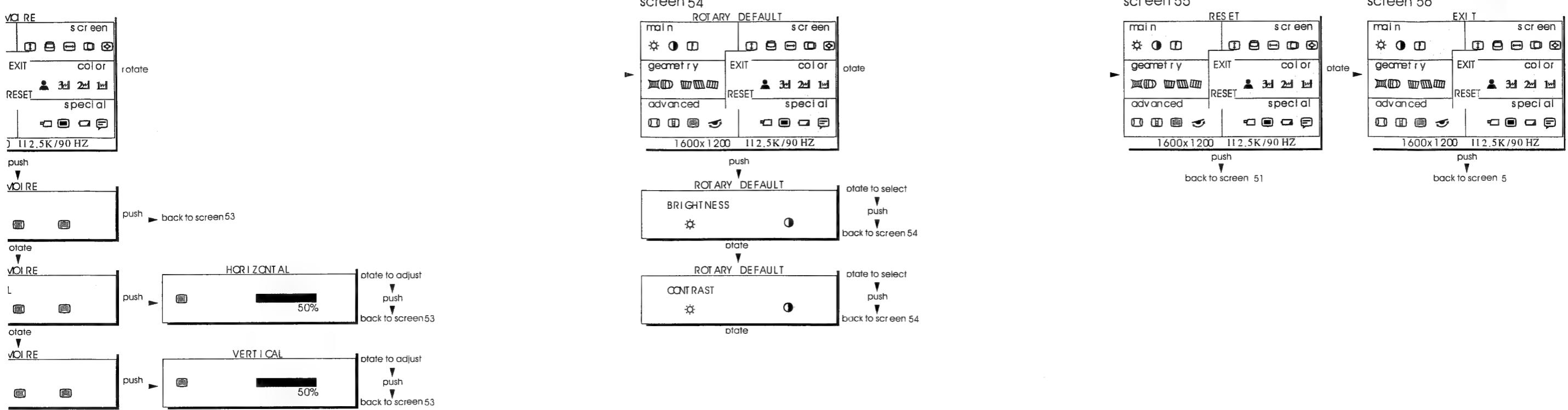




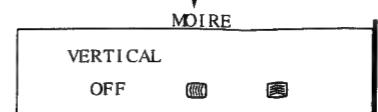
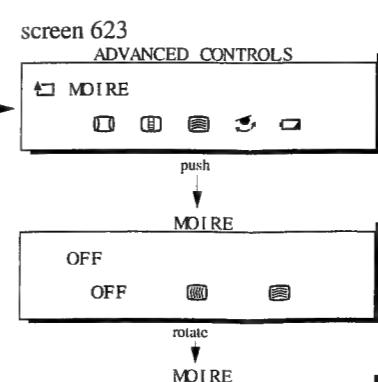
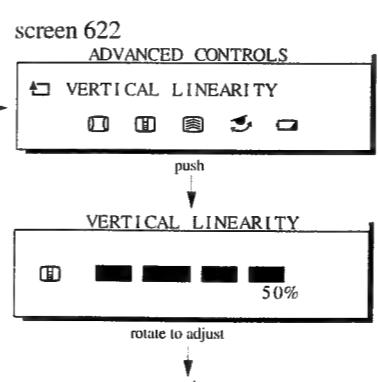
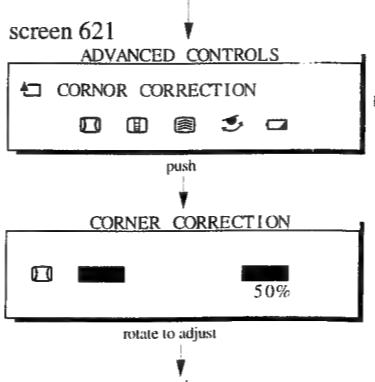
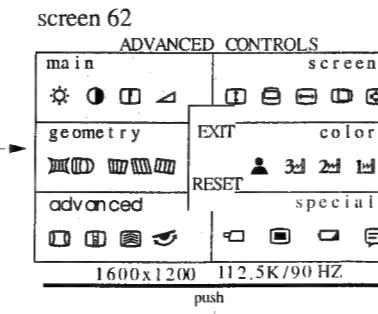
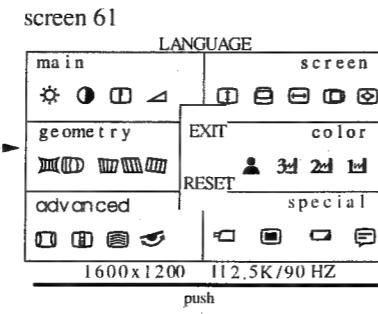
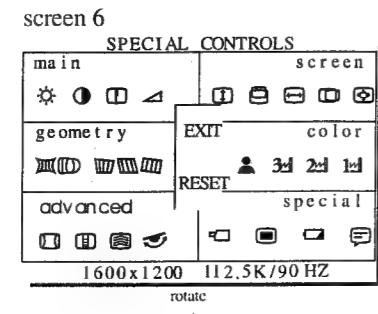
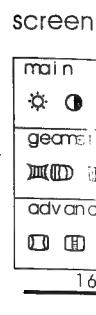
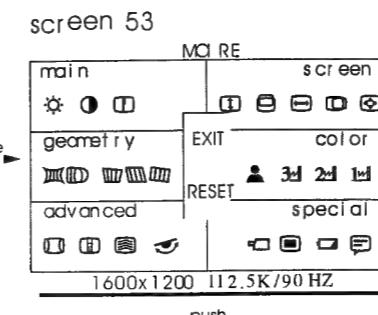
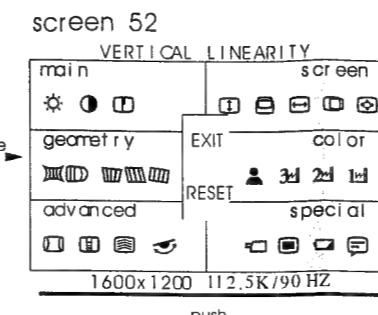
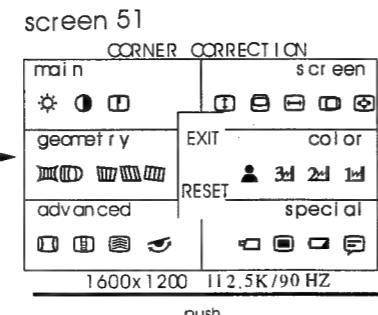
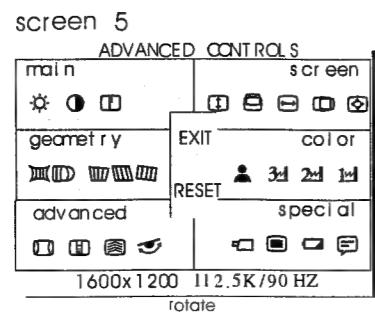
Quick Reference for OSD Adjustment (Continued)



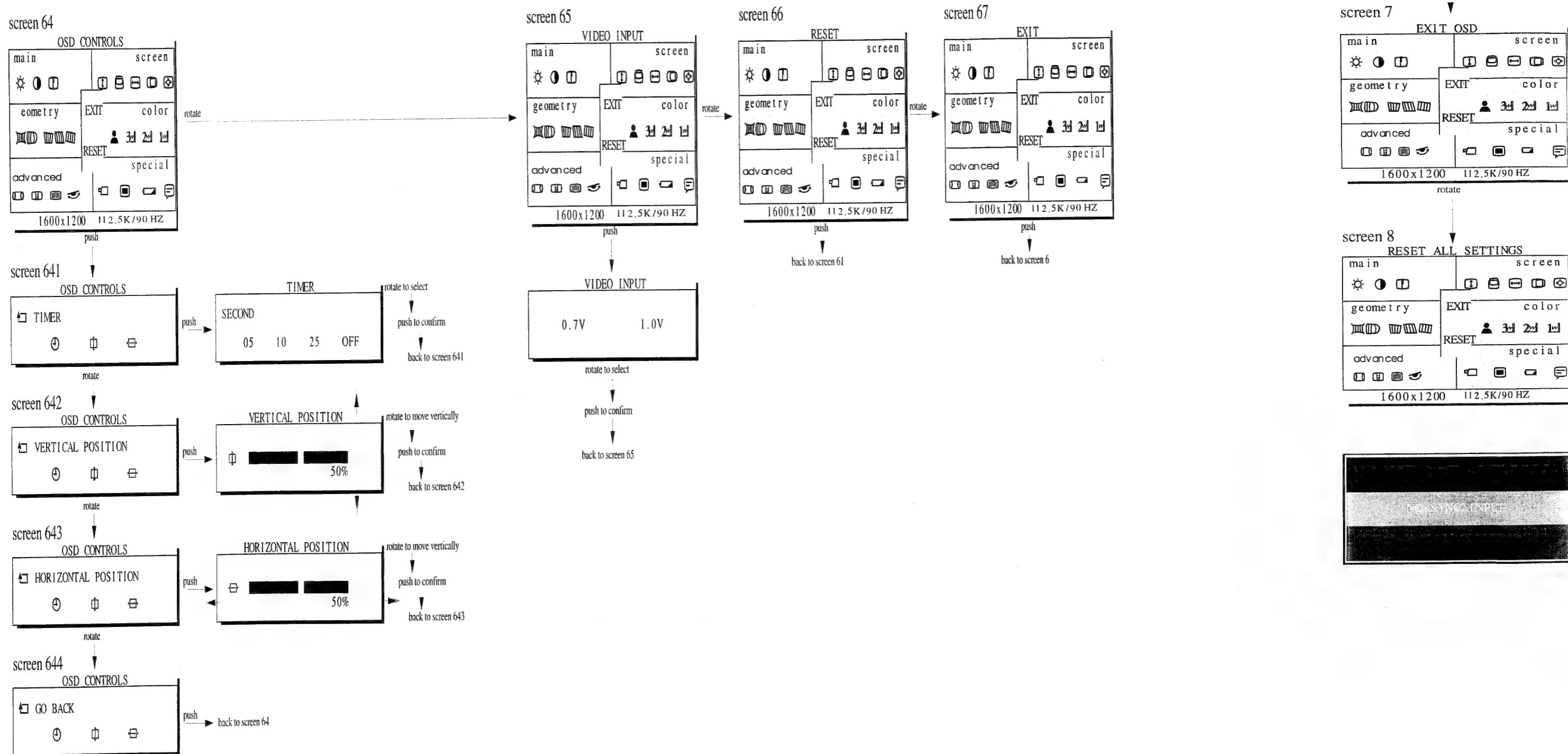


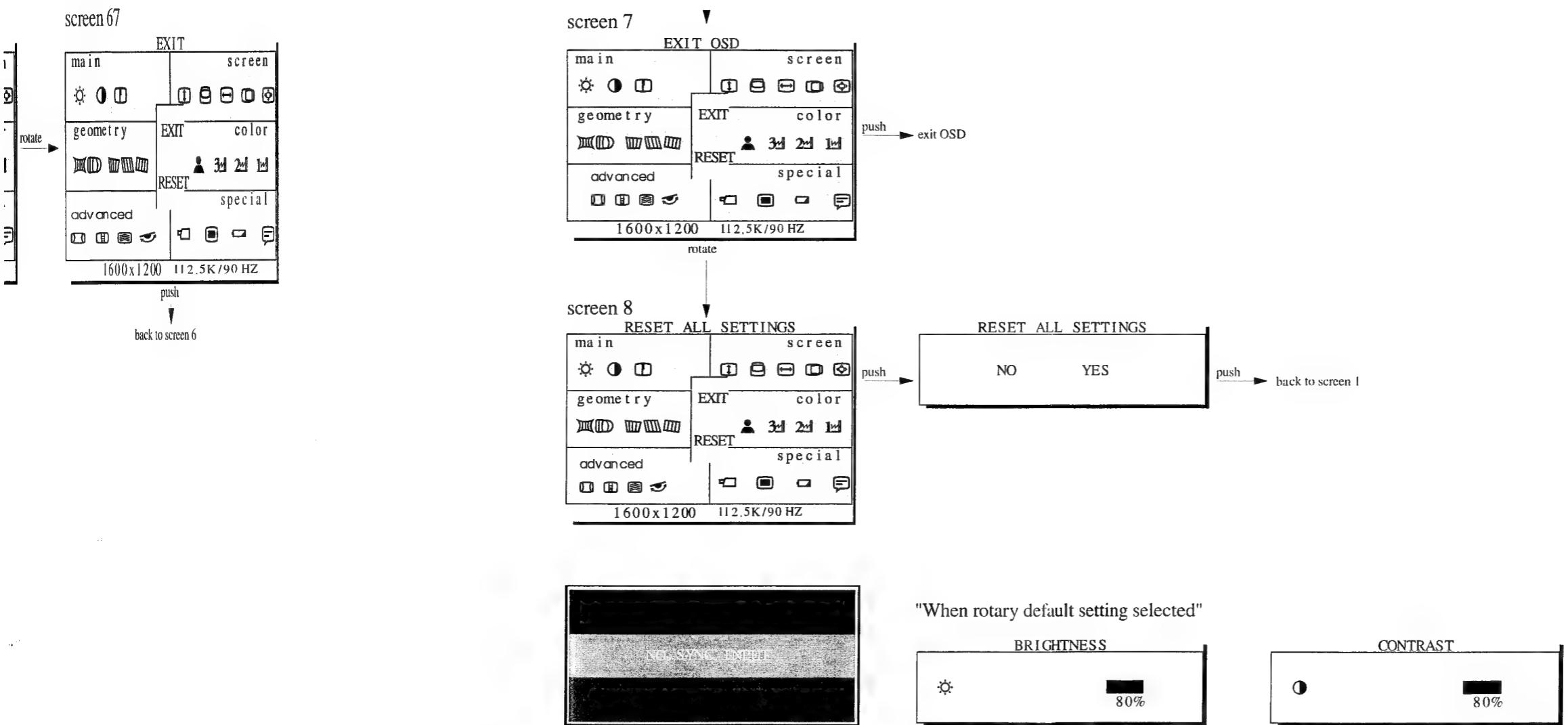


Quick Reference for OSD Adjustment (Continued)



Quick Reference for OSD Adjustment (Continued)





Mechanical Adjustments

0. Location of the panel

- 0.1 Main panel (1156)
- 0.2 Video panel (1157)
- 0.3 Terminal panel (1159)
- 0.4 USB panel (1160) - optional
- 0.5 Encoder panel (1162)
- 0.6 Power switch panel (1163)

1. General

To be able to perform measurements and repairs on the circuit boards, the monitor should placed in **Service Position** (Fig. 3.1) first:

How to remove the back cover of monitor:

There are 4 screws [2 screws are at the rear of the monitor, the other two screws are on the bottom of the monitor] to fix the front cabinet and back cover of the monitor.

Step 1: Remove the "cable cover" as shown in Fig. 3.2.
 Step 2: Remove 2 screws (rear view) as shown in Fig. 3.3.
 Step 3: Turn the set to remove the other 2 screws, as shown in Fig. 3.4.

Step 4: Turn the set to its original position.
 Step 5: Remove back cover (* There are two "plastic clips" on the "front cabinet" to hold the "rear cover" as shown in Fig. 3.5).

Chassis :

After removing the back cover, you can see the inside the monitor with metal frame and metal shield.

- Remove 26 screws for service position as Fig. 3.6 to Fig. 3.15.

Video panel :

- After removing the metal frames, remove the metal shielding on rear side of Video panel for measurement.

Main panel :

After removing the metal frames,
 - Disconnect "Video panel"
 - Disconnect EHT cable (EHT cap)
 - Disconnect 4 pin connector "M1501" (wire of YOKE, on Main panel)
 - Disconnect 2 pin connector "M1114" (degaussing coil, on Main panel)
 - Disconnect 1 pin connector "M1701" (on Video panel)
 - Disconnect 2 pin connector "M1219" (on Main panel)
 - Disconnect 9 pin connector "M1217" (on Main panel)
 - Disconnect 3 pin connector "M1213" (on Main panel)
 - Disconnect 3 pin connector "M1504" (on Main panel)
 - Disconnect 2 pin connector "M1218" (on Main panel)
 - Disconnect 2 pin connector "M1220" (on Main panel)
 - Disconnect 7 pin connector "M1212" (on Main panel)

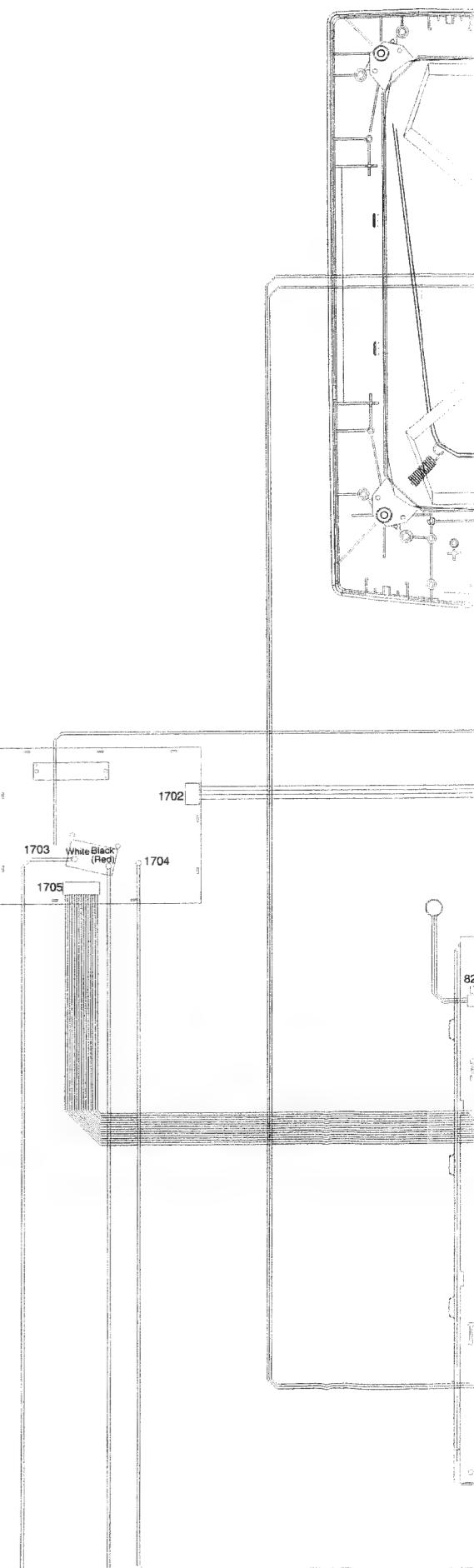
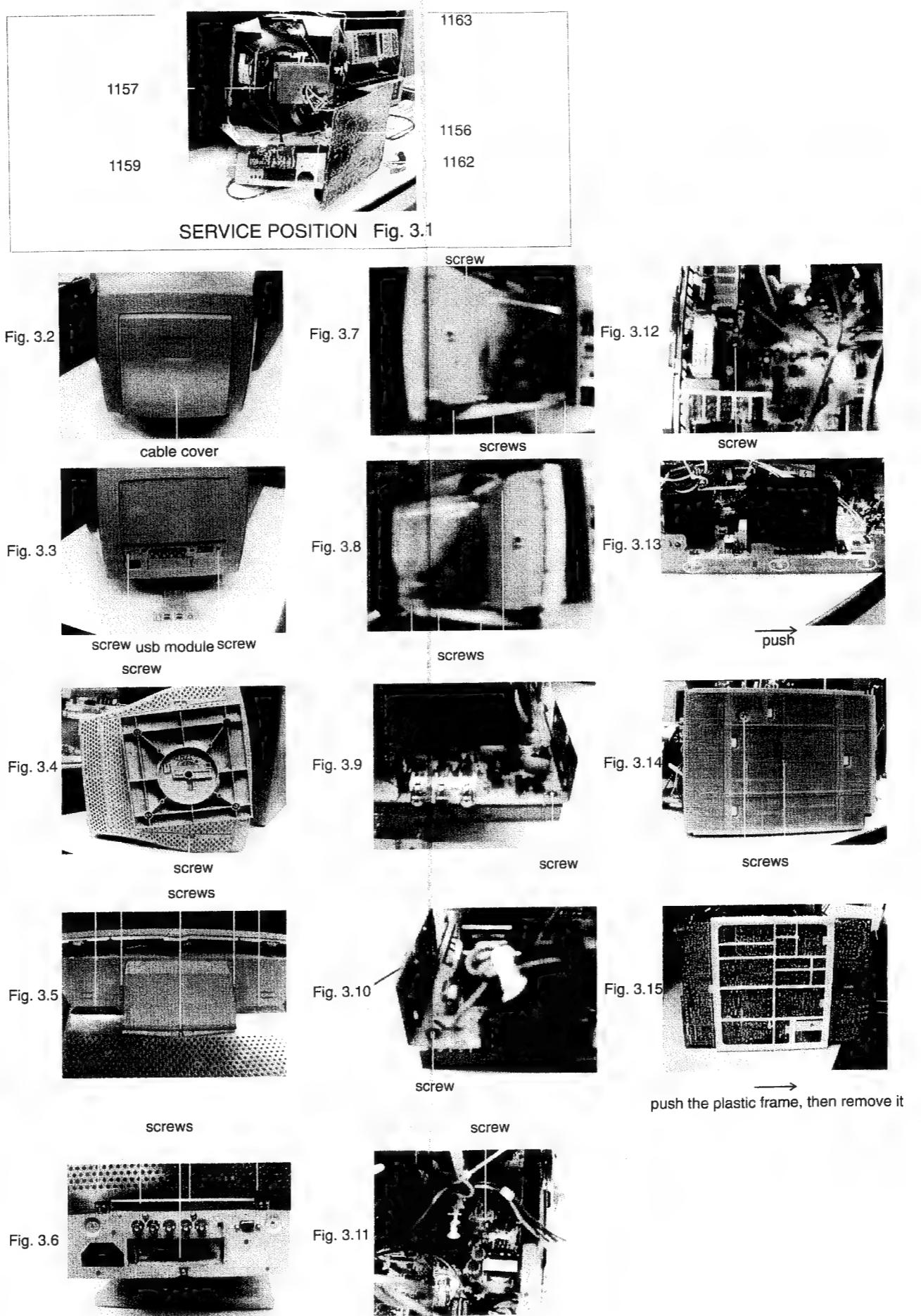
- To slide out Main panel.
 - Remove 2 screws as shown in Fig. 3.14, then push the clips to the right as shown in Fig. 3.13, to separate the bottom plate.
 - Remove the plastic frame as shown in Fig. 3.15.
 - Remove the "Rotary panel" "Earphone panel" from Front cabinet and place it on the table as shown in Fig.3.1.
 - Connect all the connectors and panels for service position.

Service position :

Place monitor in service position as shown in Fig. 3.1 through Fig. 3.15.

2. Repair instructions

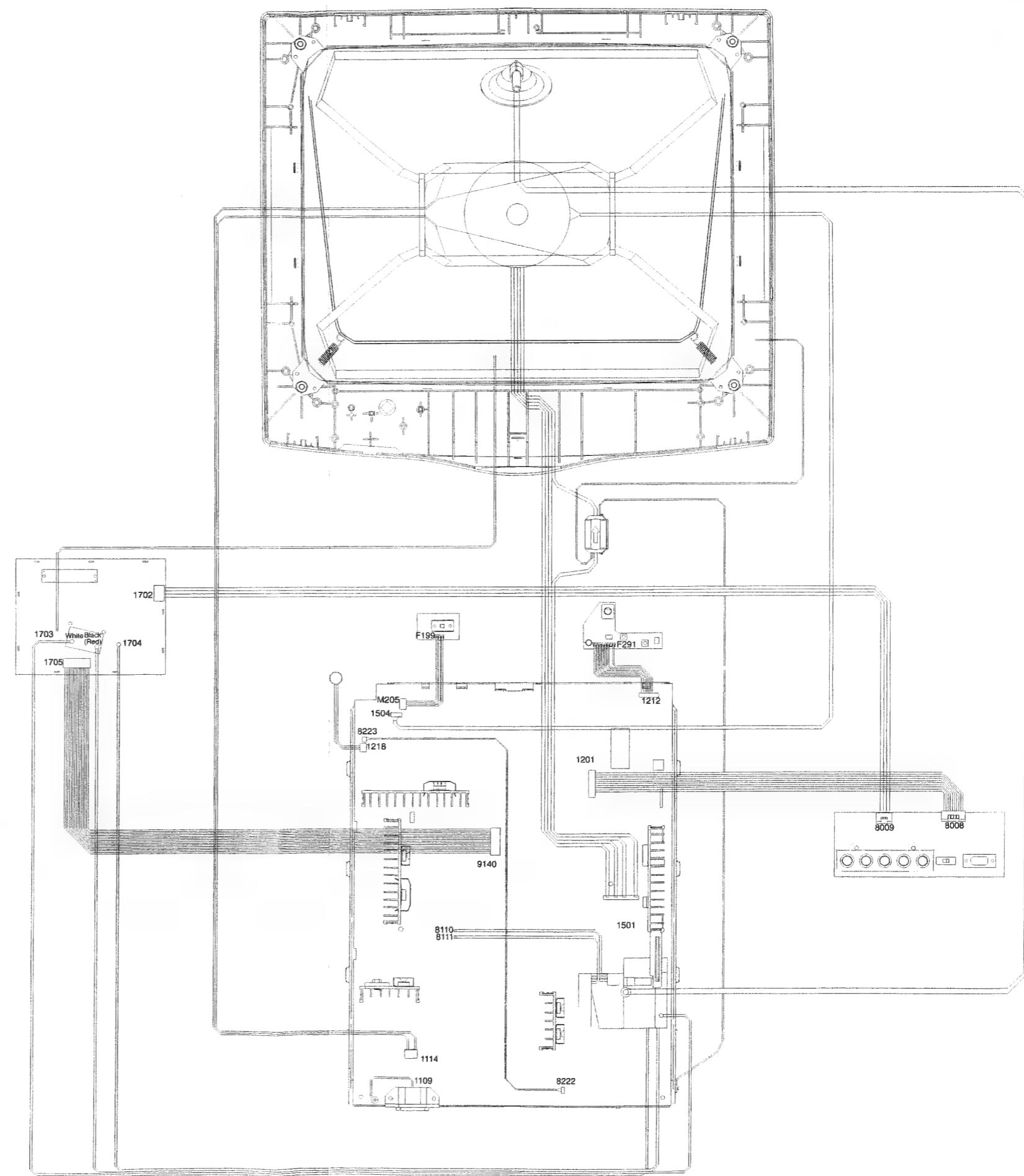
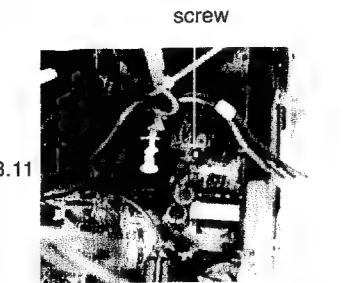
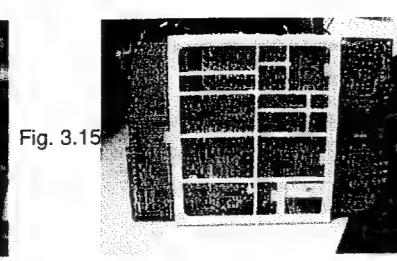
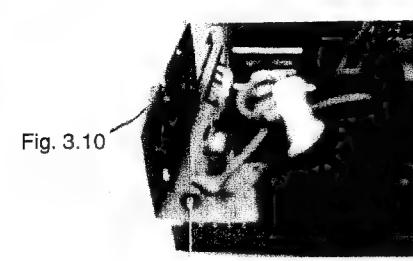
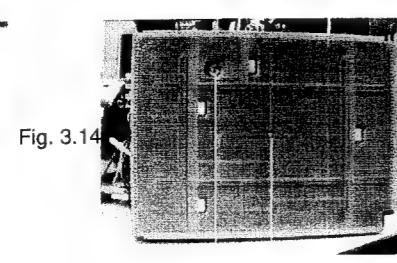
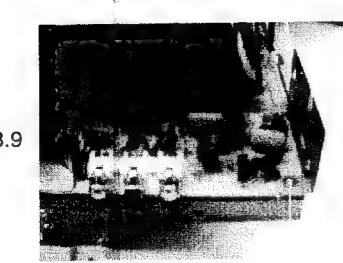
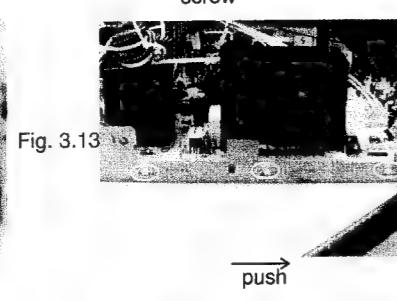
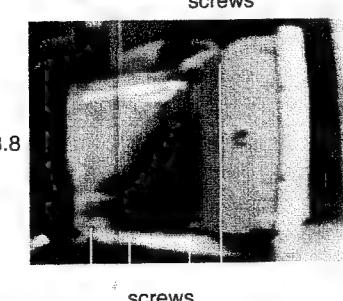
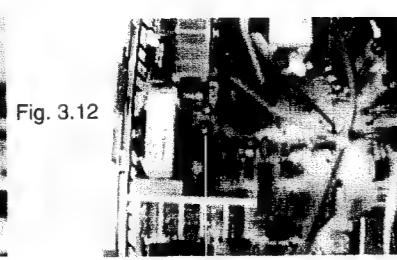
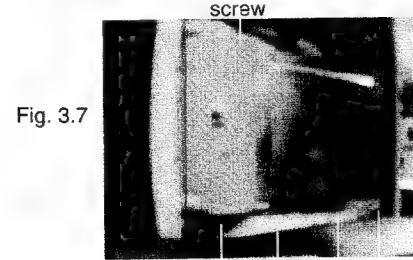
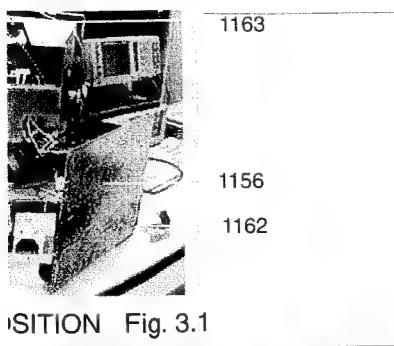
After the service position is obtained, all the panel's copper trace sides may be accessed.



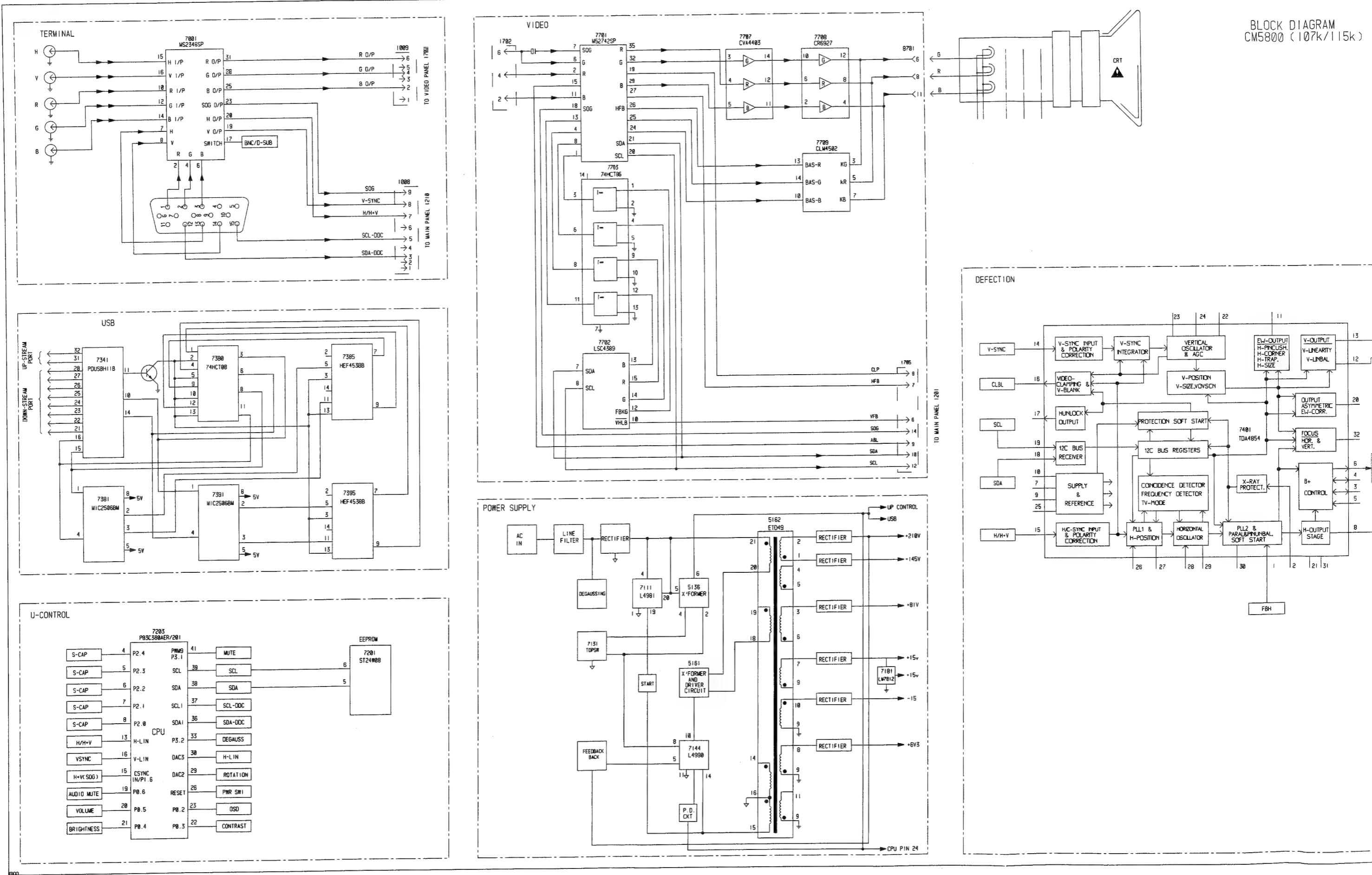
Wiring diagram

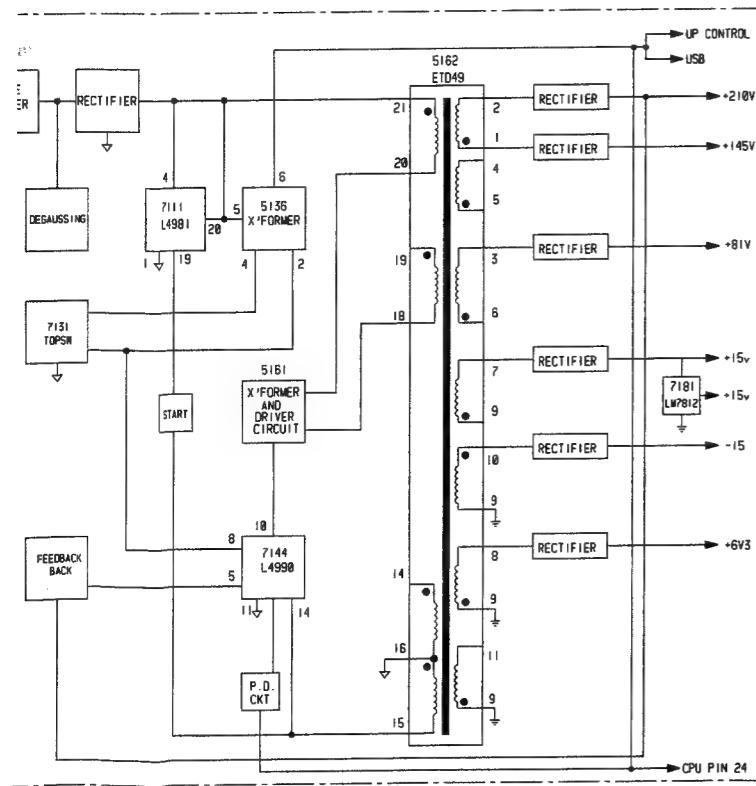
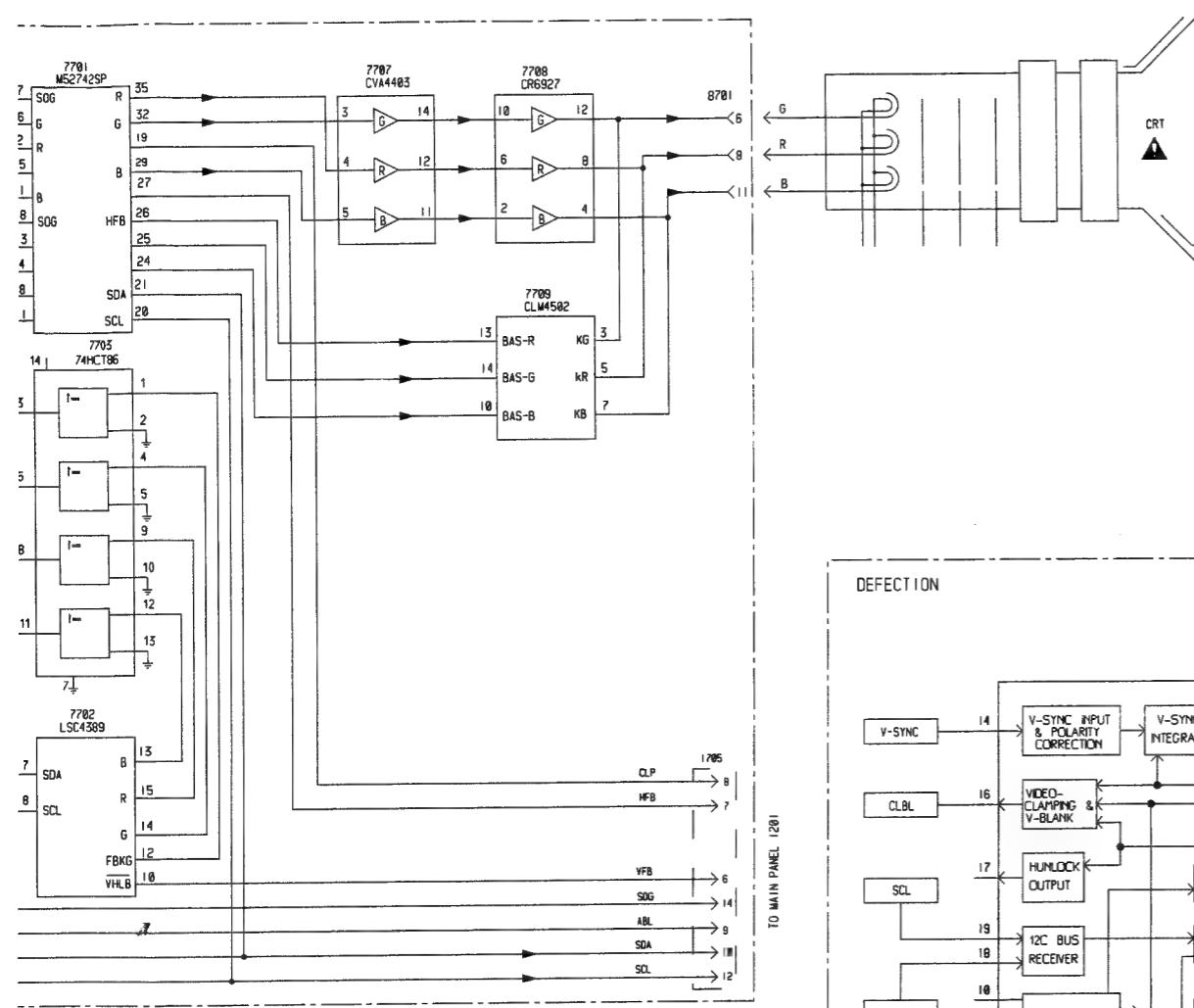
CM5800 21A

15

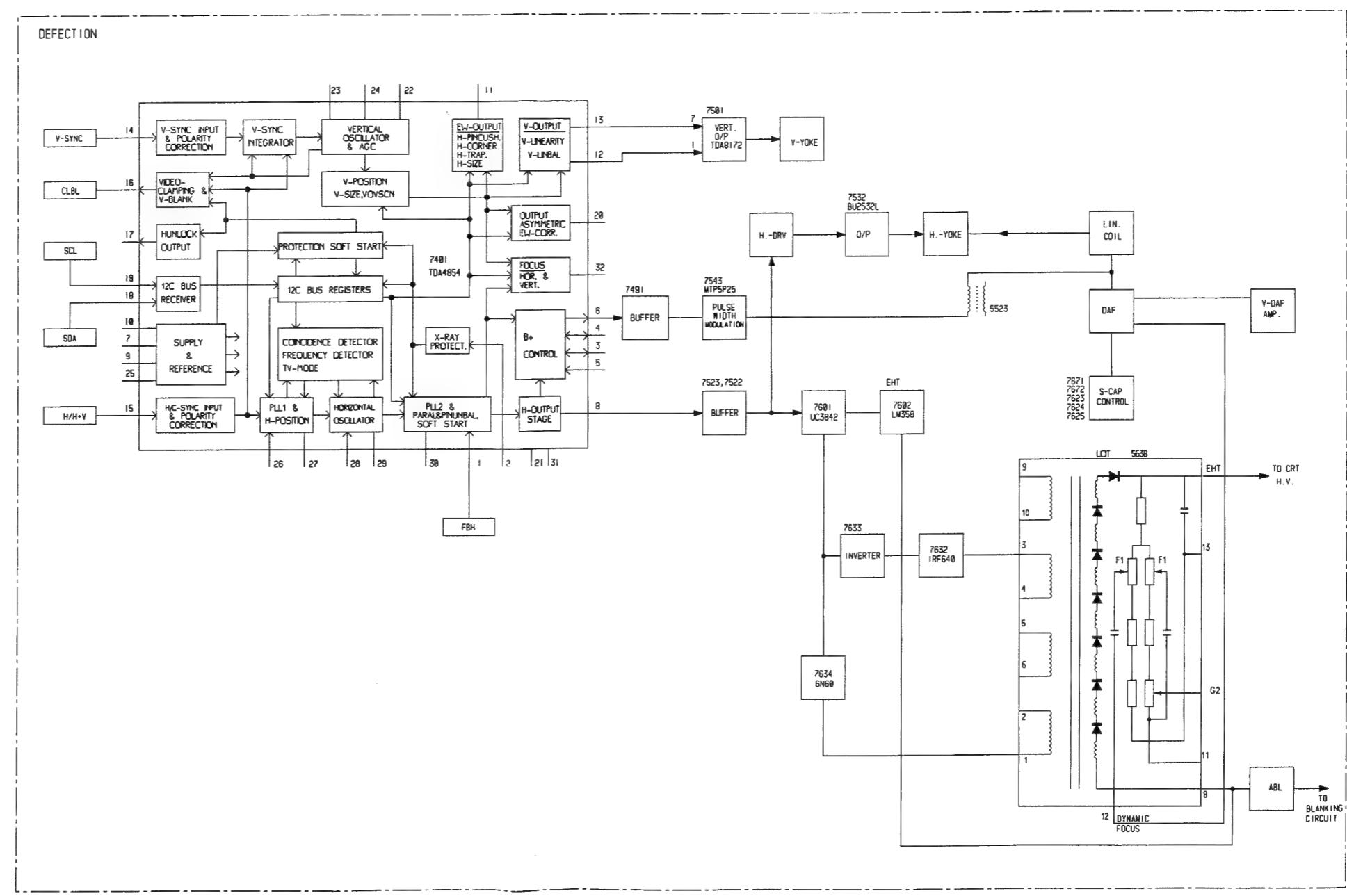


Block Diagram

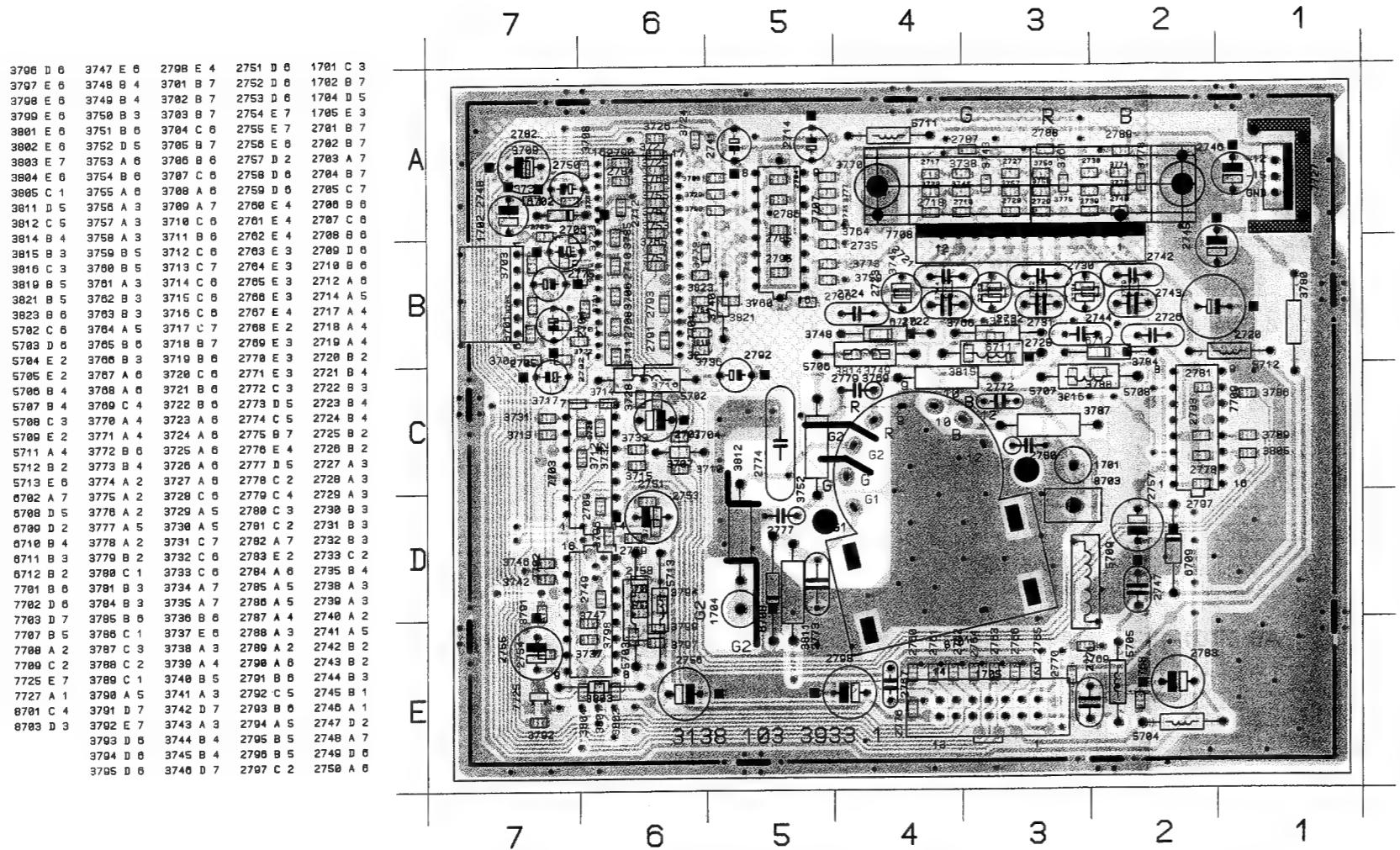




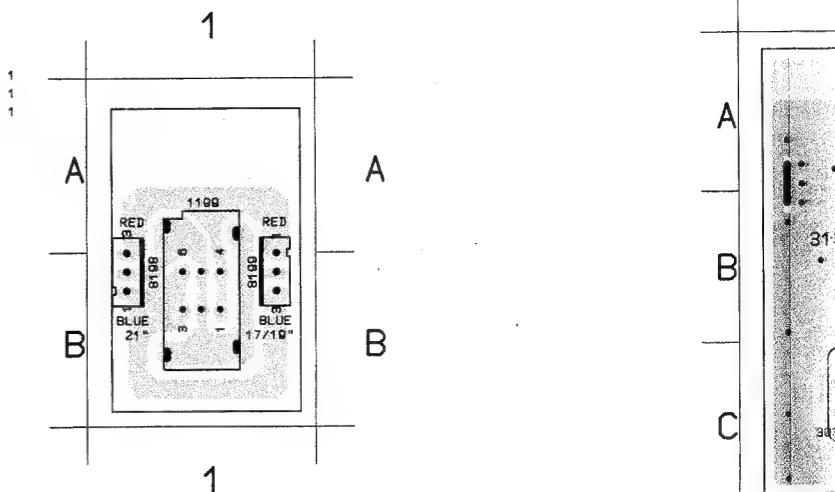
BLOCK DIAGRAM
CM5800 (107k/115k)



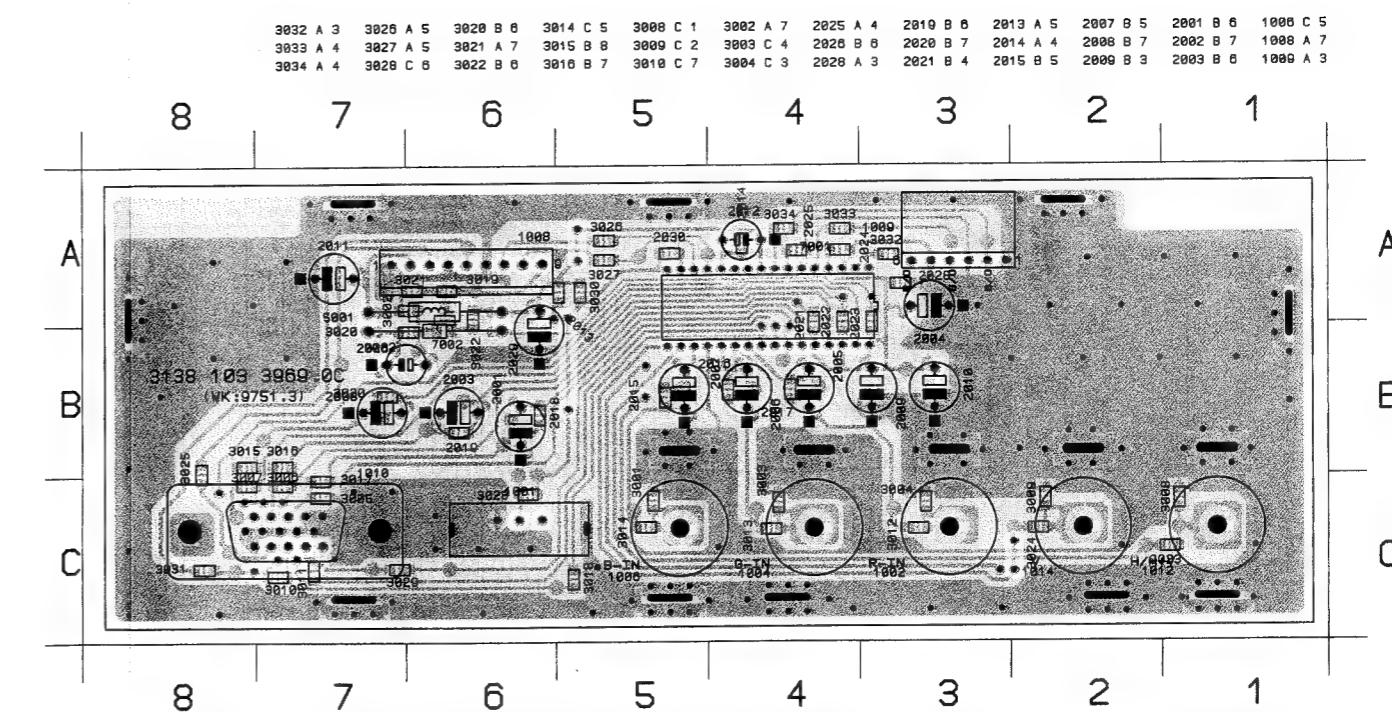
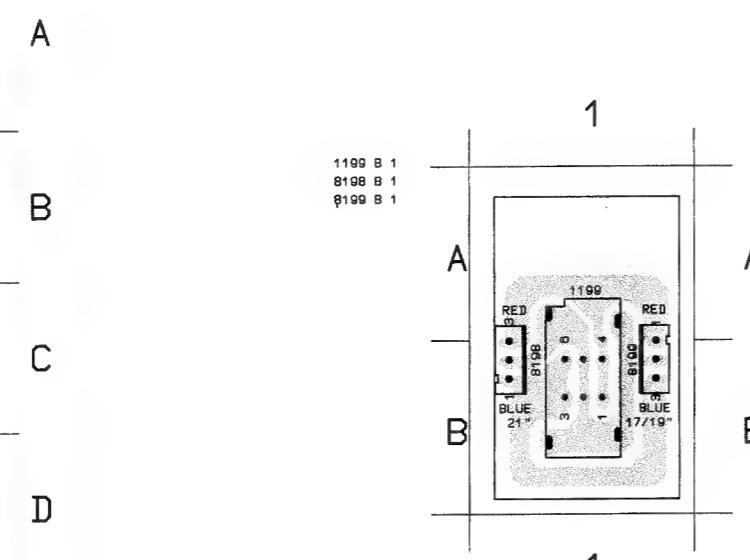
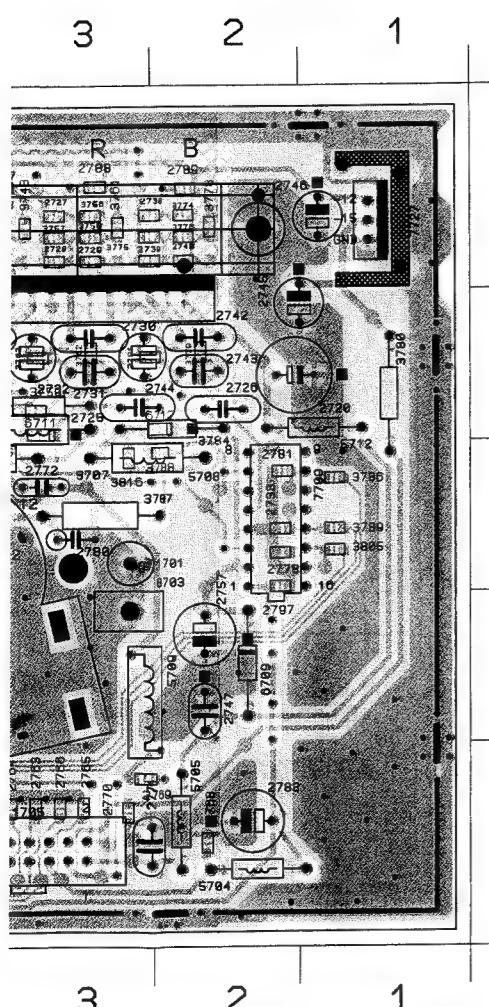
Video Panel C.B.A. (A)



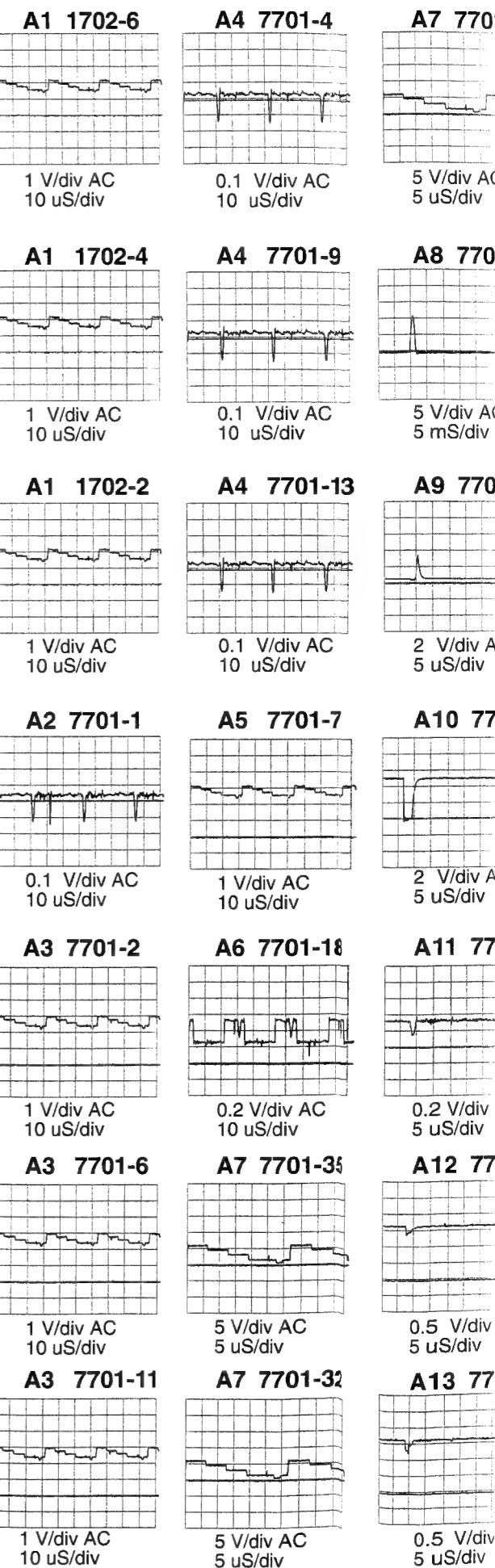
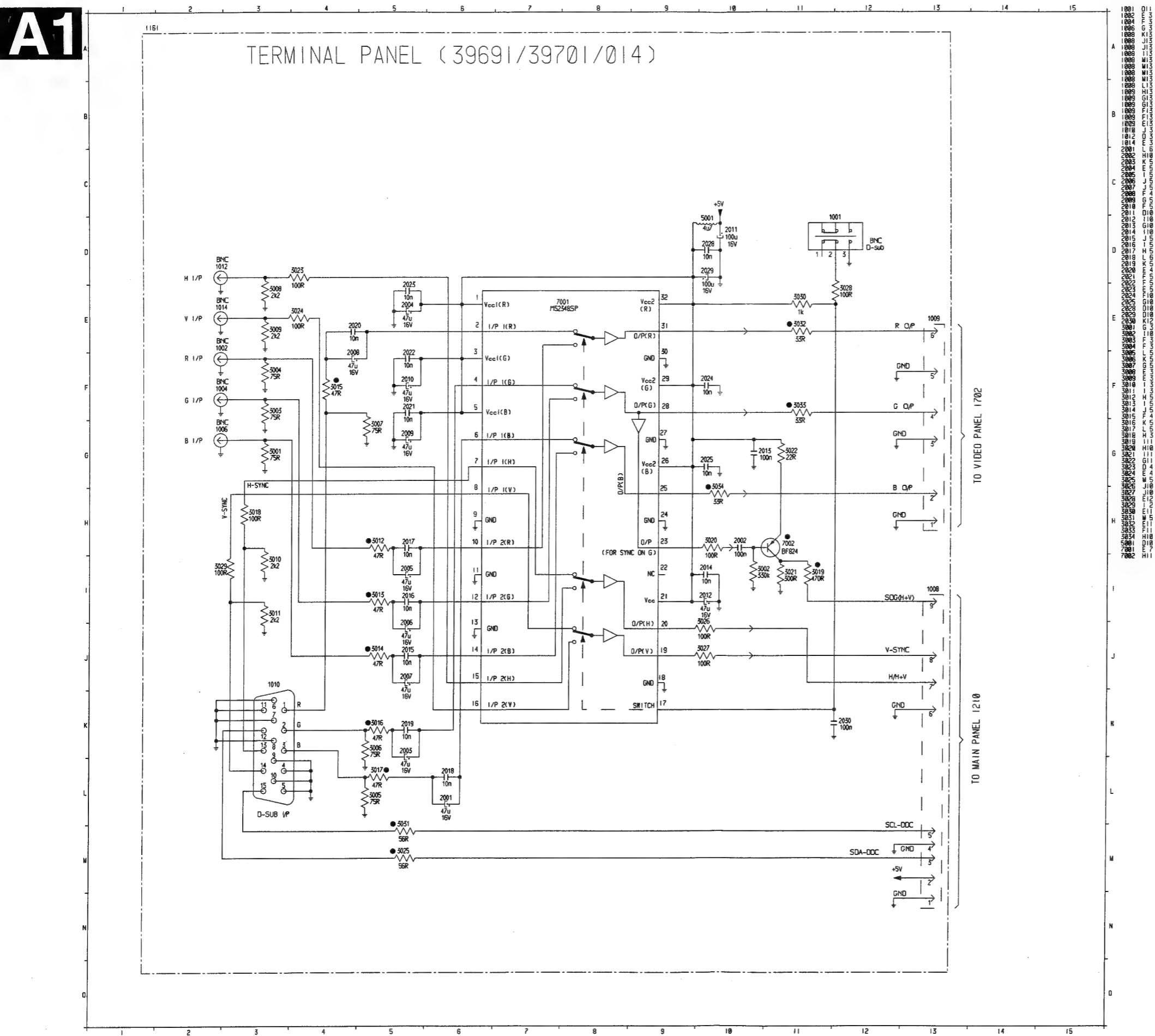
Power Switch Panel C.B.A. (G)



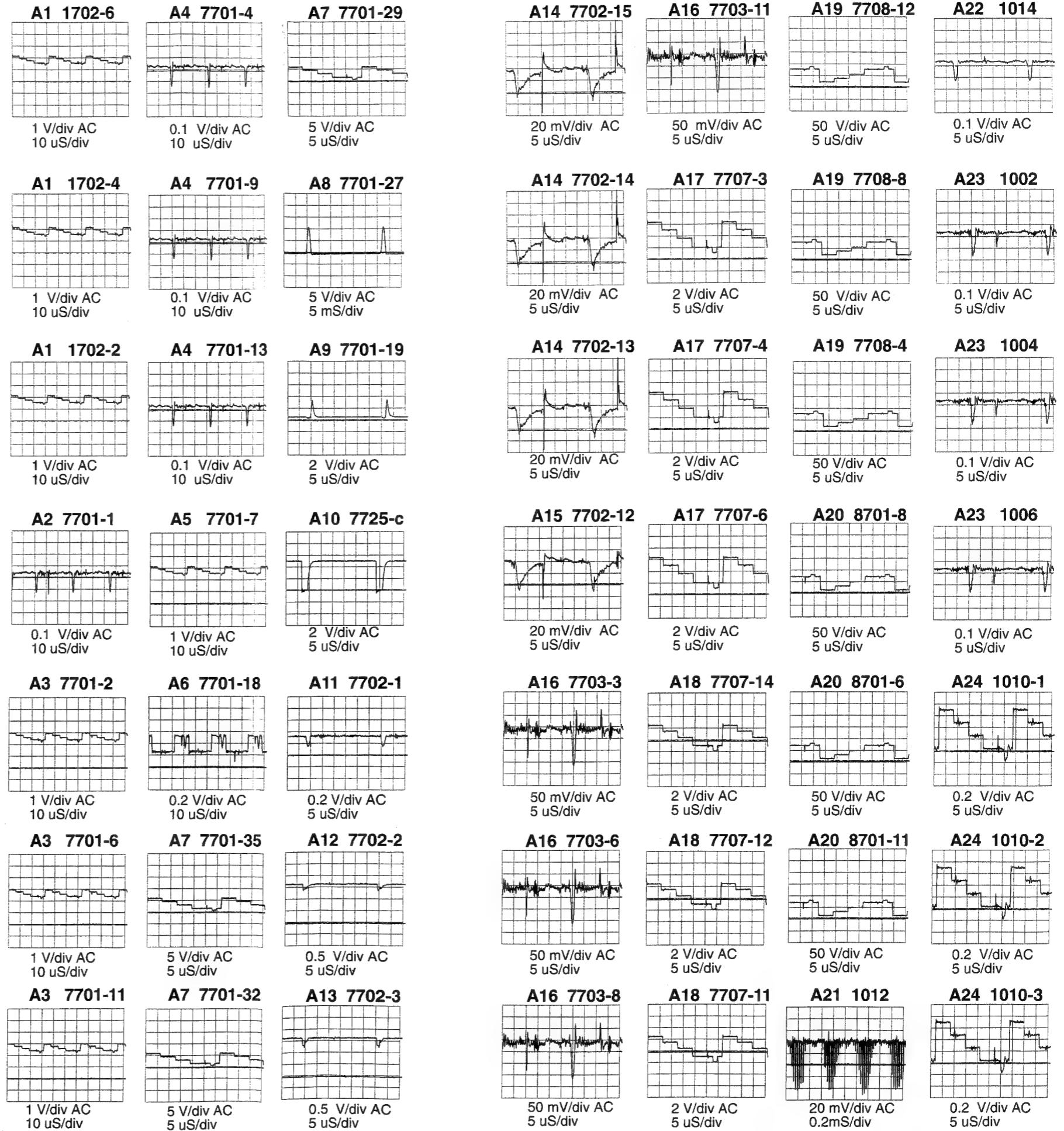
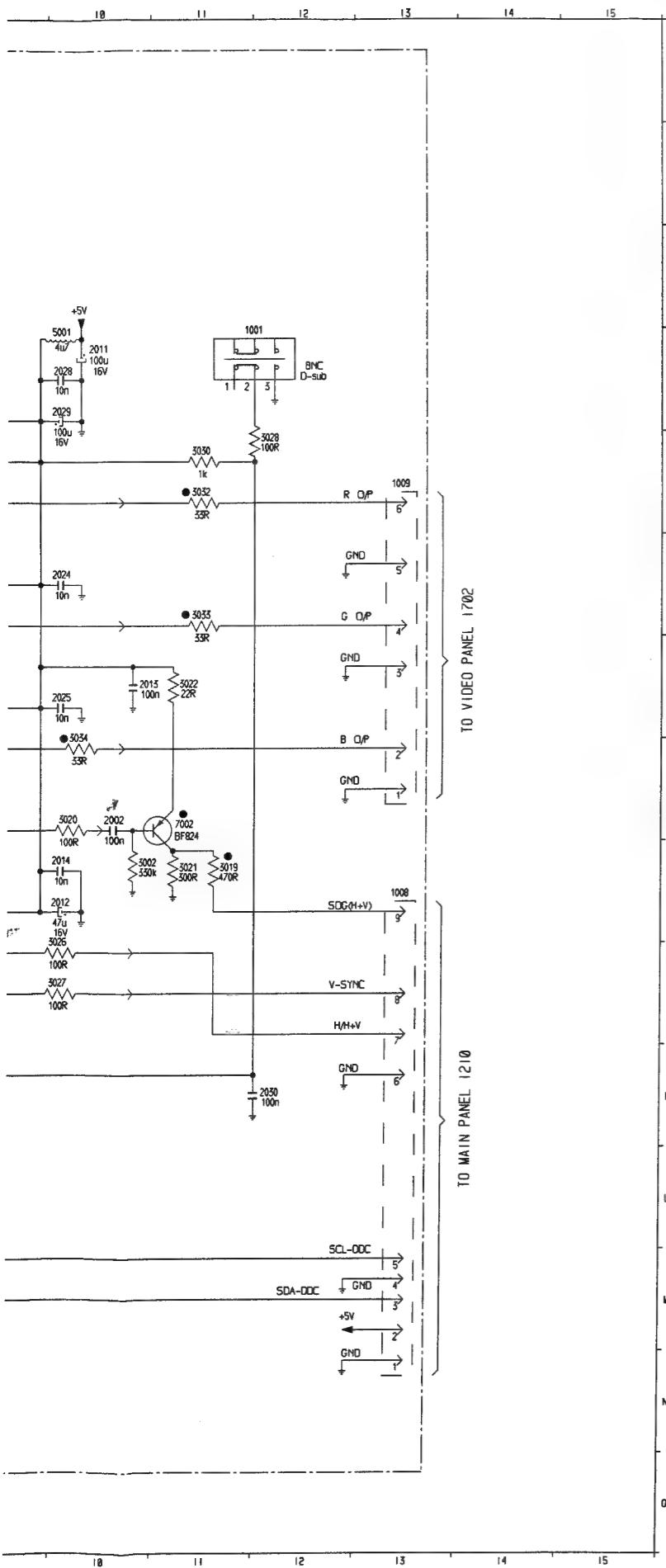
Power Switch Panel C.B.A. (G)



Terminal Schematic Diagram



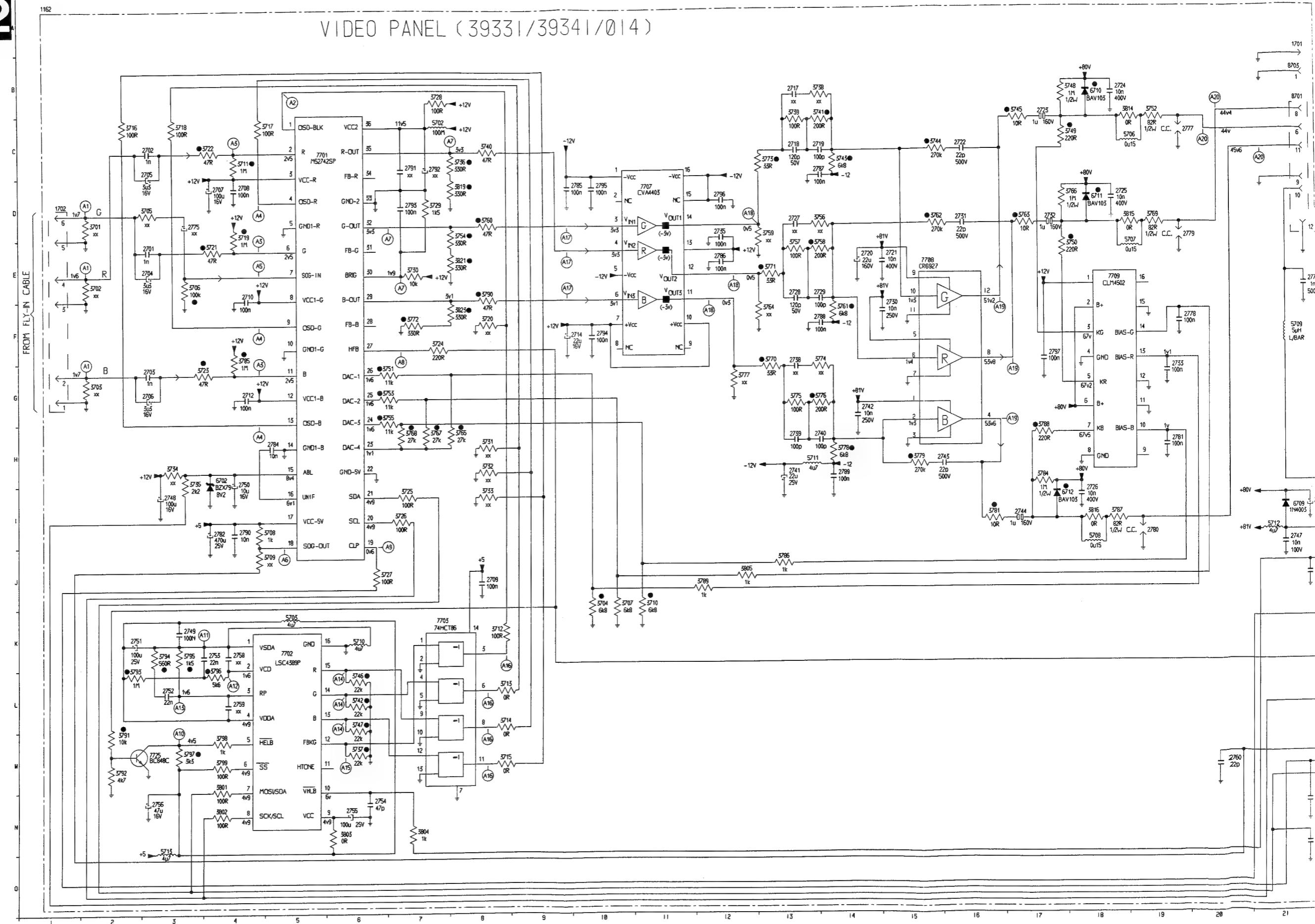
Waveforms



Video

A2

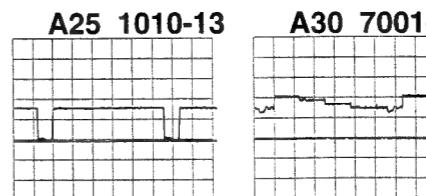
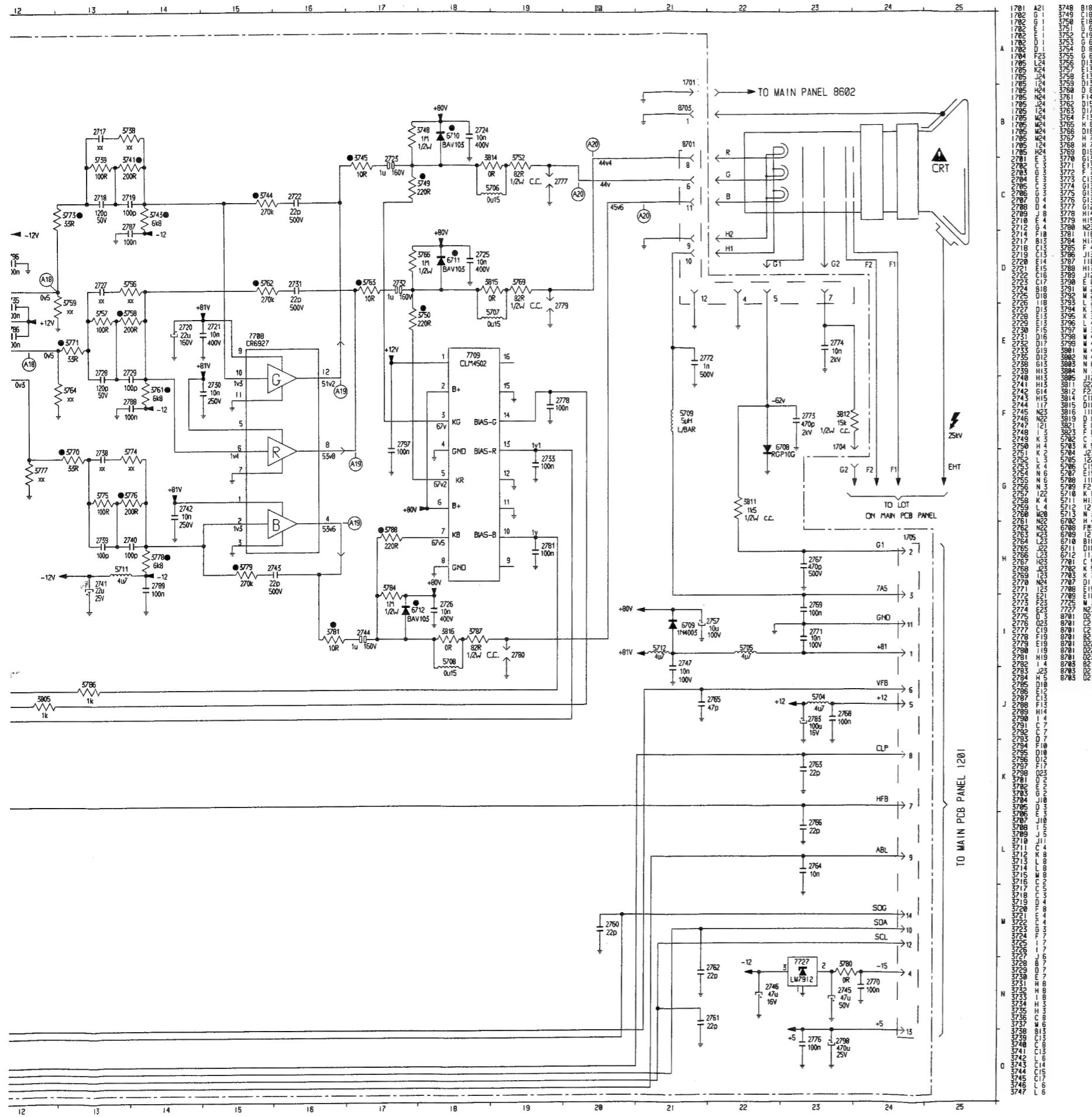
VIDEO PANEL (39331/39341/014)



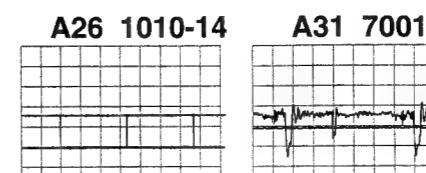
Waveforms for Diagram A1

CM5800 21A

19



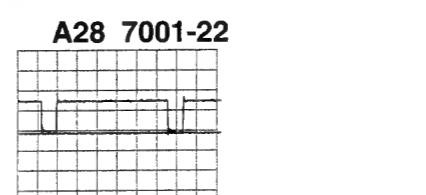
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5 μ S/div



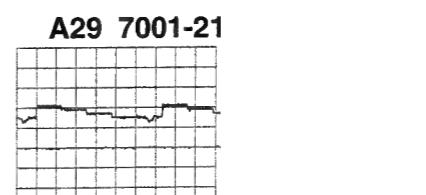
2 V/div AC 0.1 V/div AC



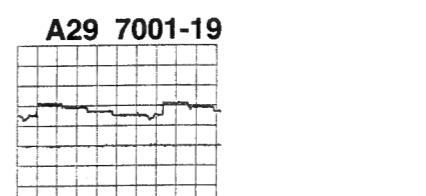
20 mV/div AC
5 mS/div



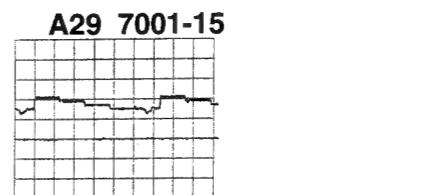
2 V/div AC
5 μ S/div



1 V/div AC
5 uS/div

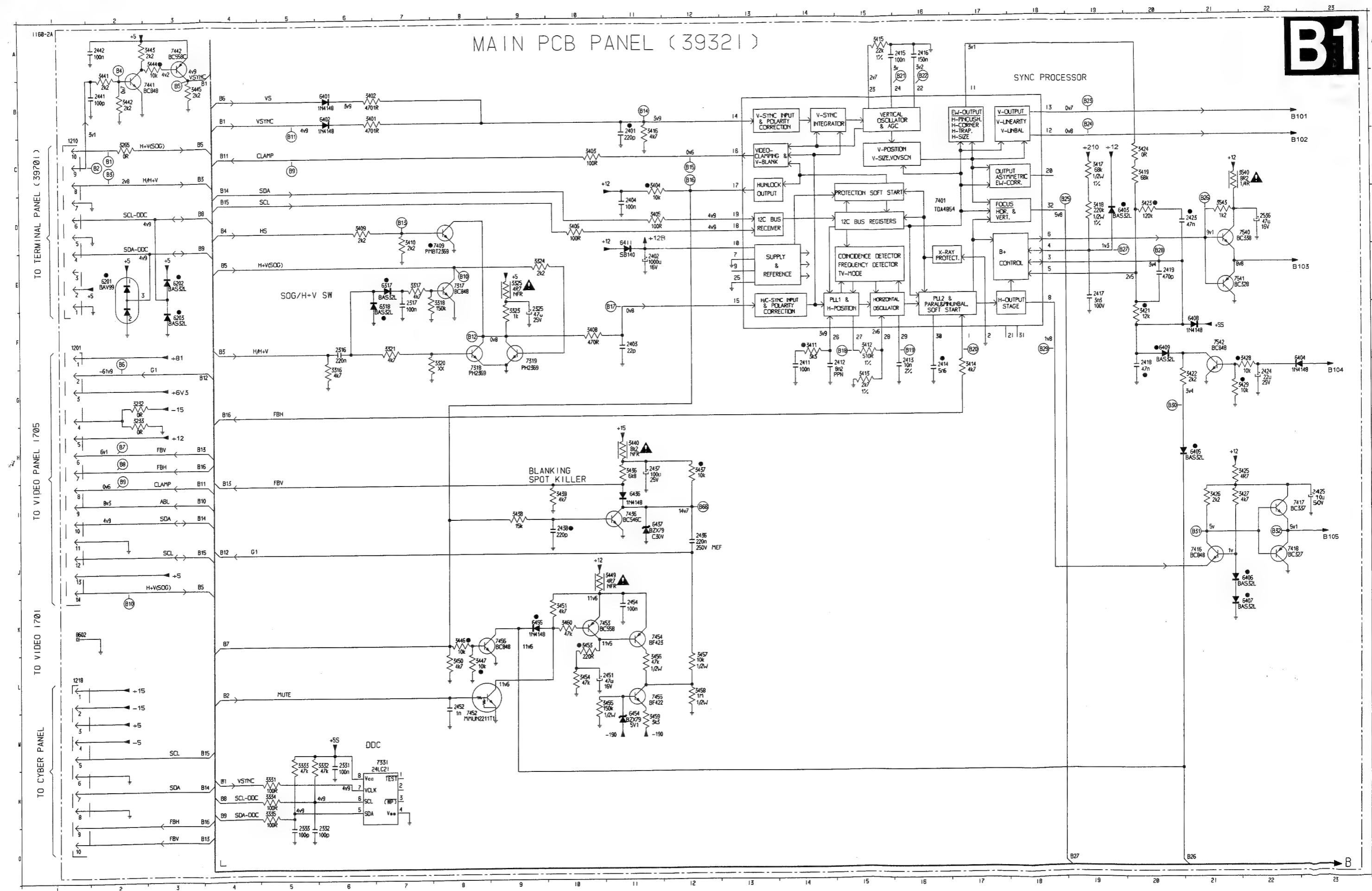


1 V/div AC
5 μ S/div

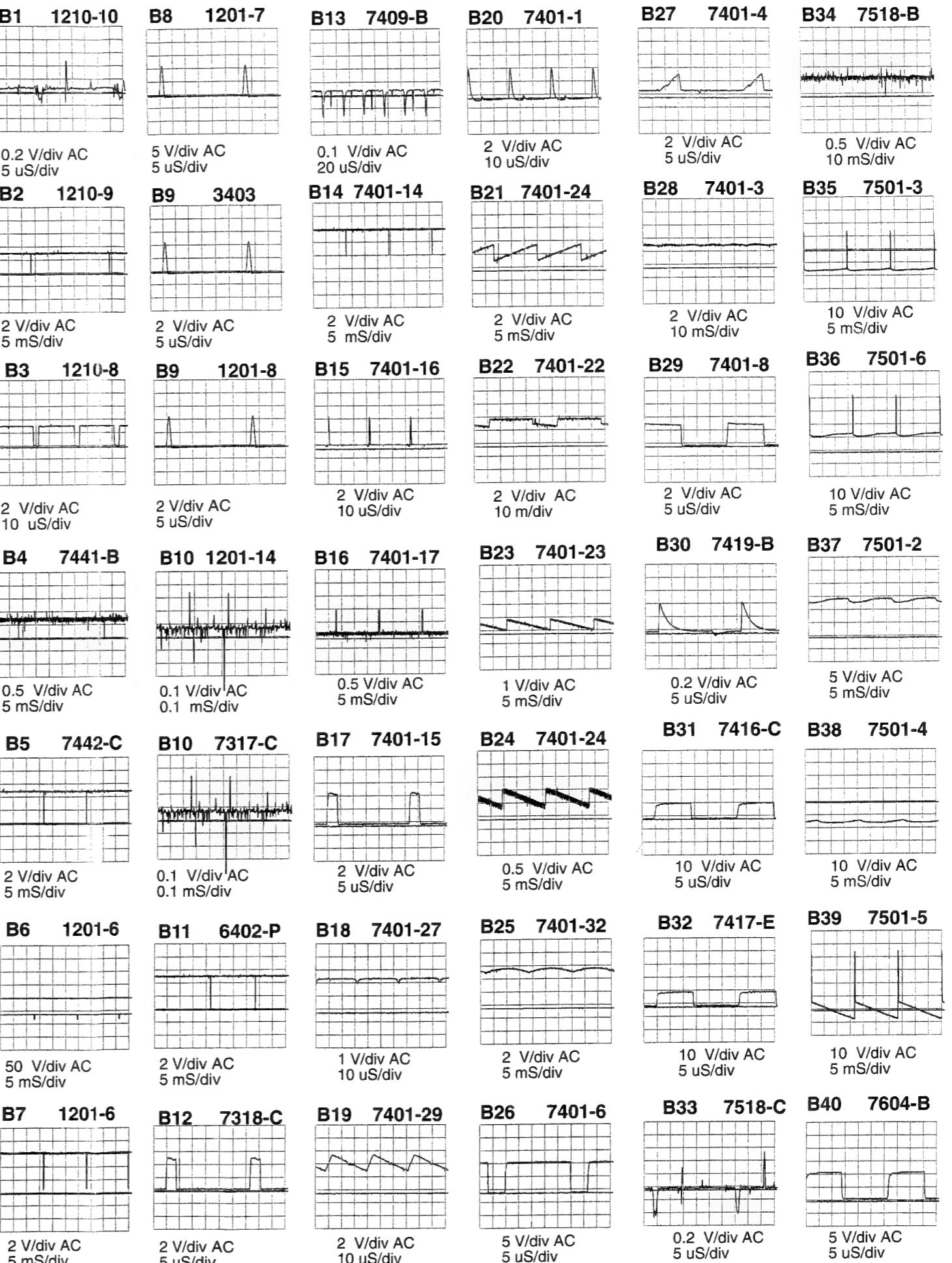
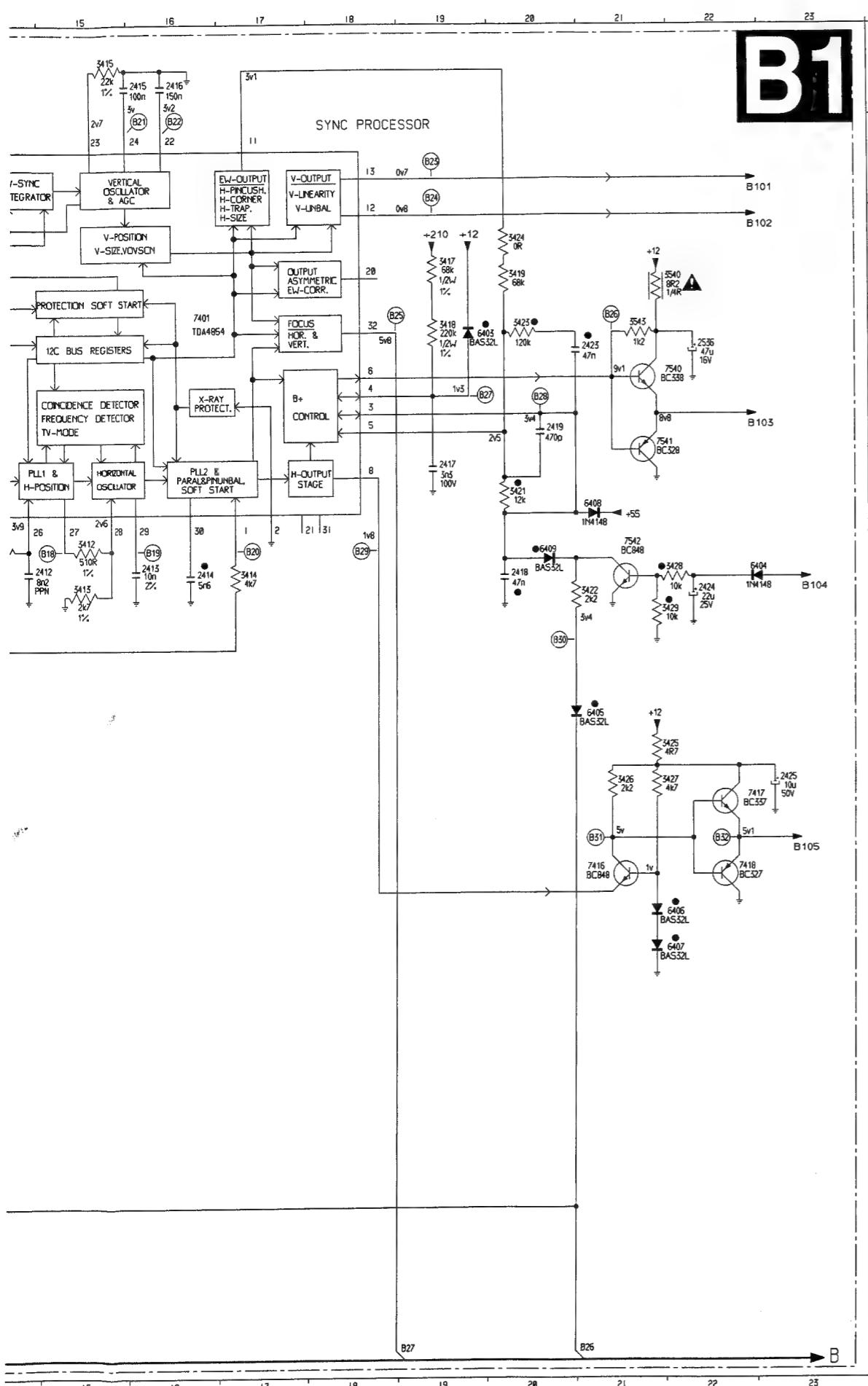


1 V/div AC
5 uS/div

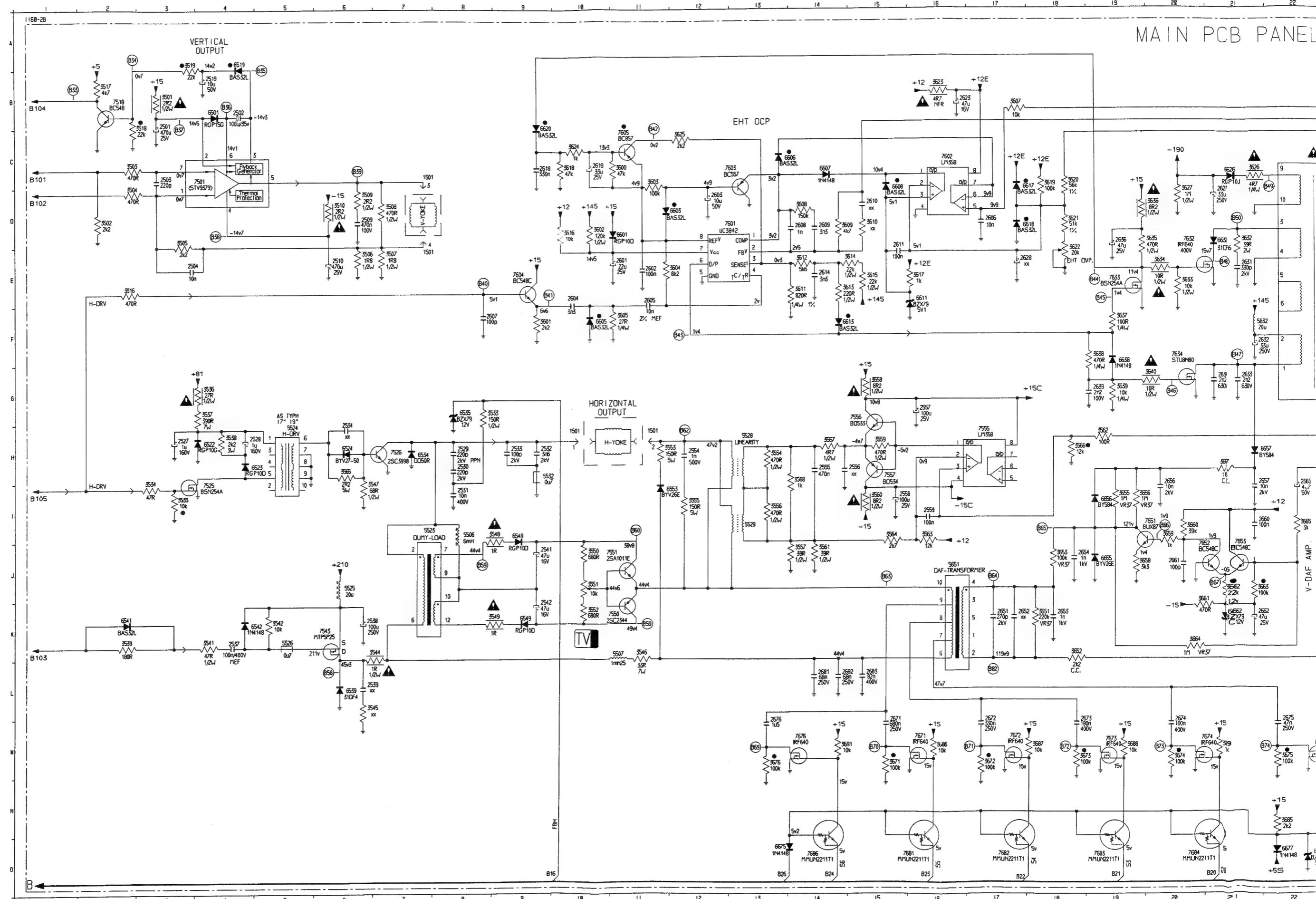
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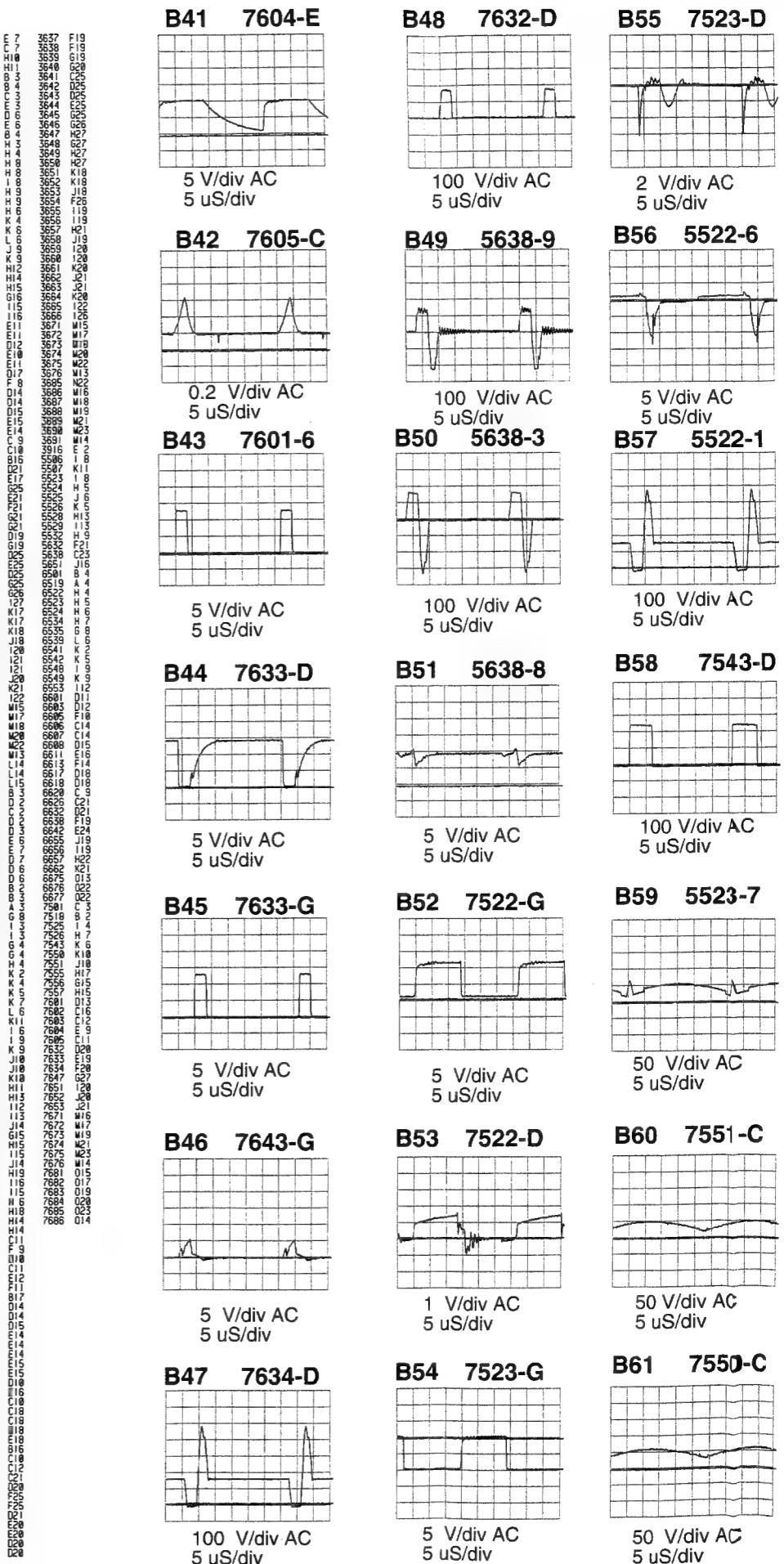
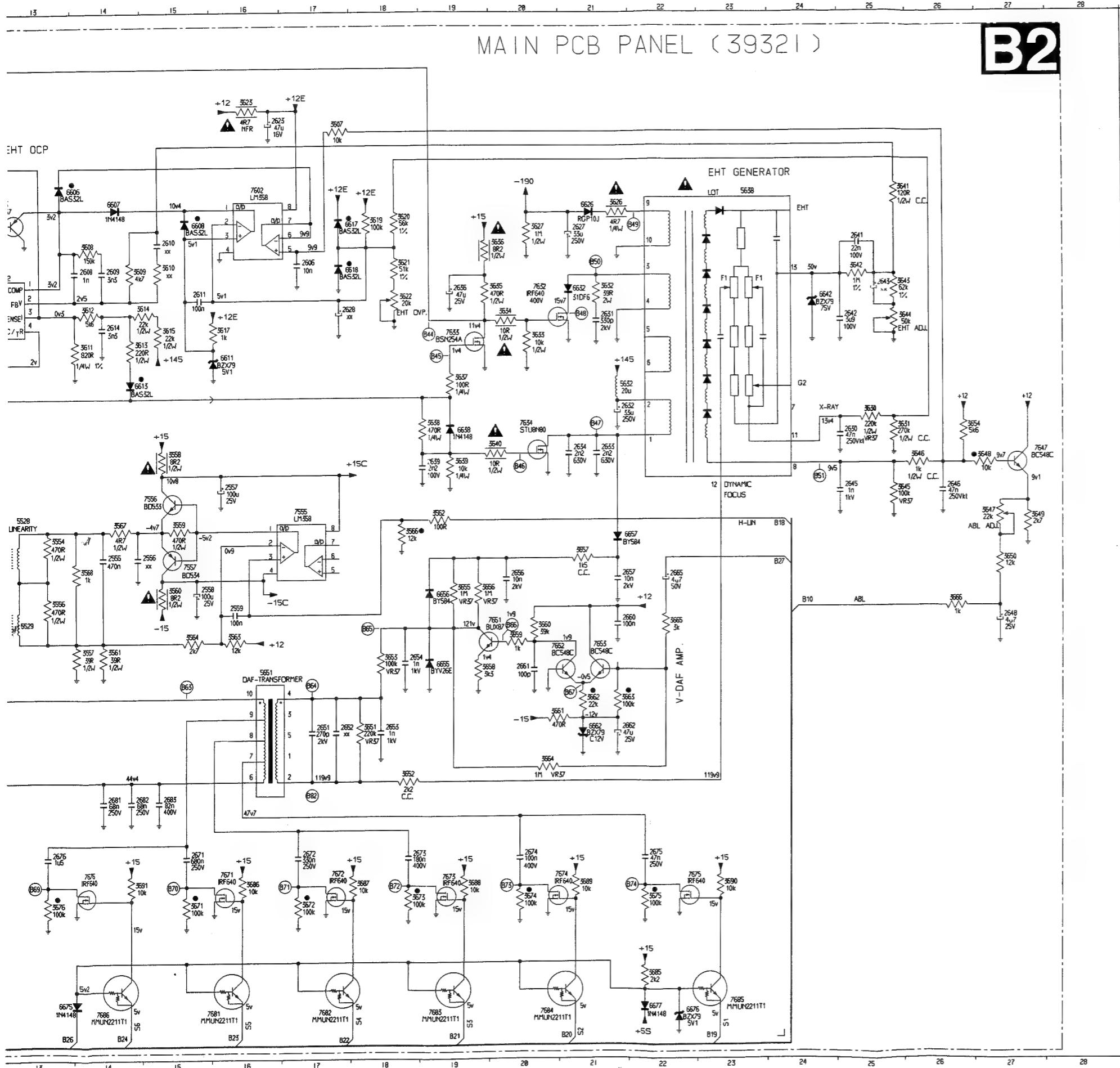
Deflection



Deflection

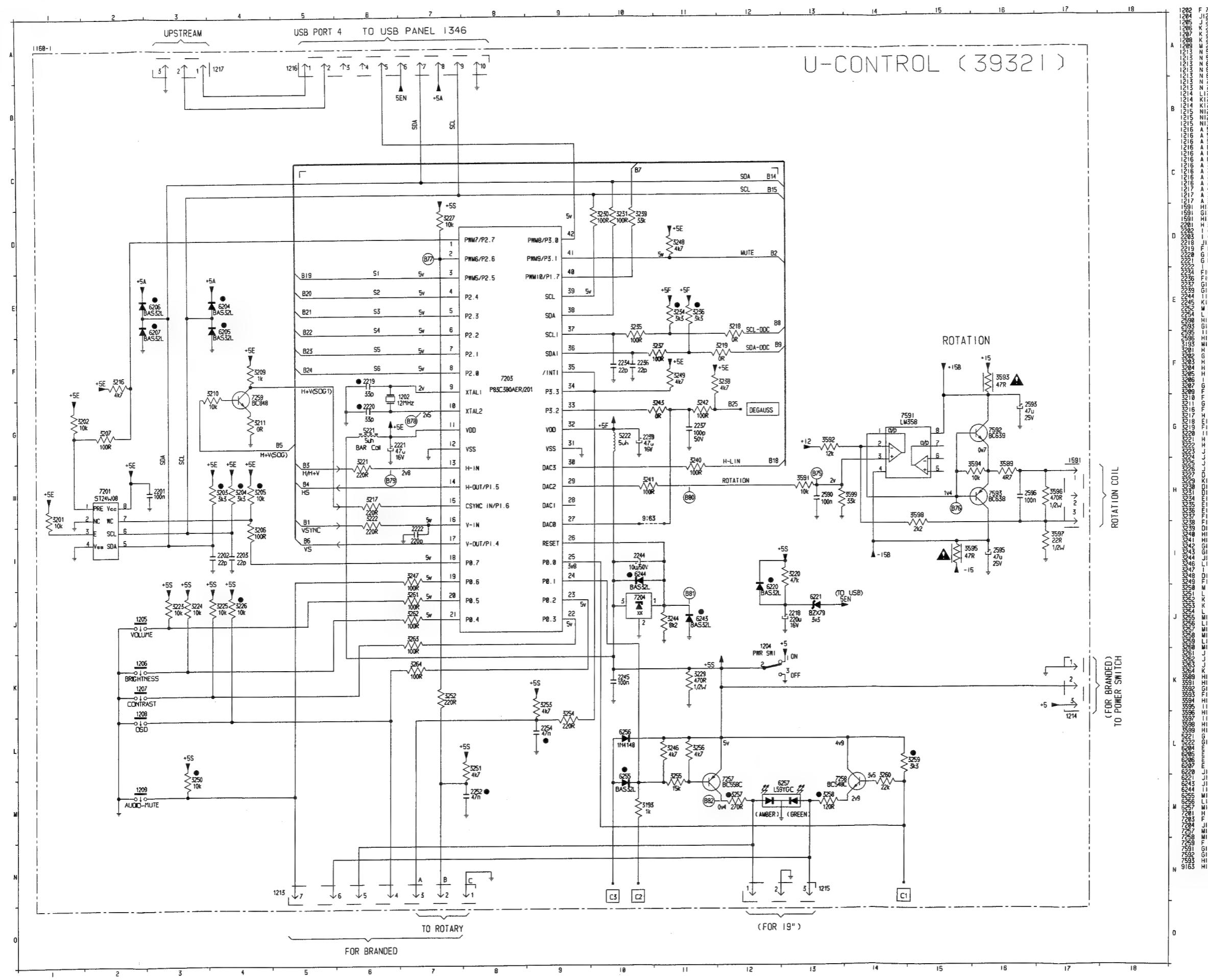


Waveforms



U-CTRL

B3



B62 3553

B63 5651

B64 565

B65 765

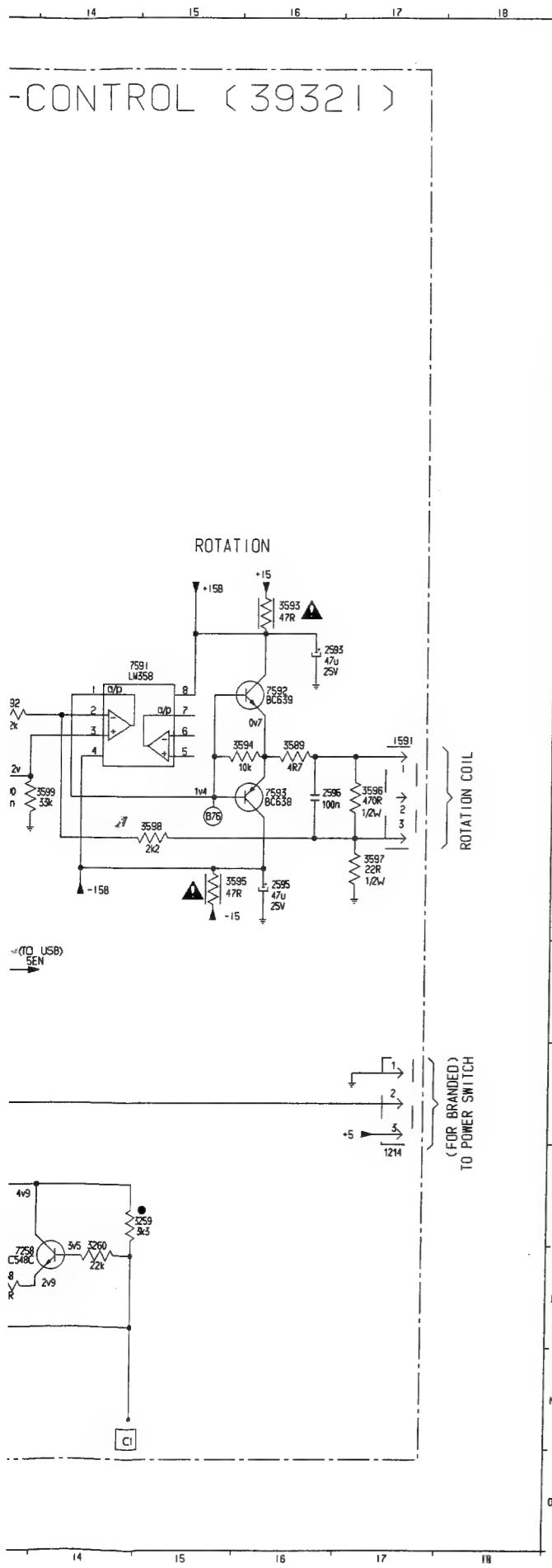
B66 765

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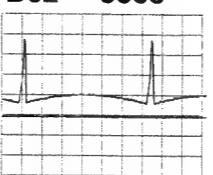
B68 7436

B69 7436

Waveforms

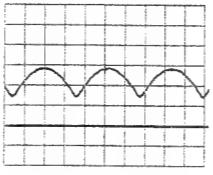


B62 3553



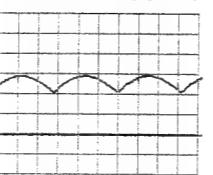
50 V/div AC
5 uS/div

B63 5651-10



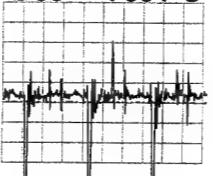
20 V/div AC
10 uS/div

B64 5651-4



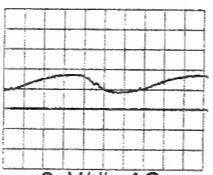
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10 uS/div

B65 7651-C



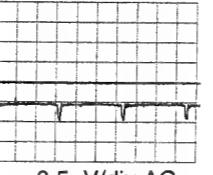
50 mV/div AC
10 uS/div

B66 7651-B



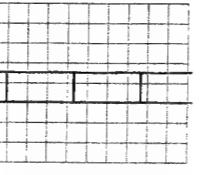
2 V/div AC
5 uS/div

B67 7652-E



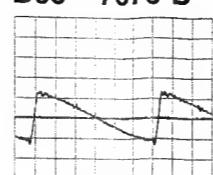
0.5 V/div AC
10 uS/div

B68 7436-C



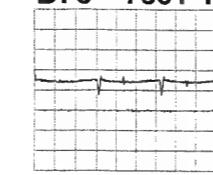
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5 mS/div

B69 7676-D



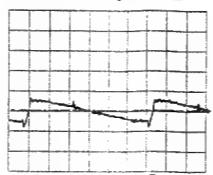
0.5 V/div AC
5 uS/div

B76 7591-1



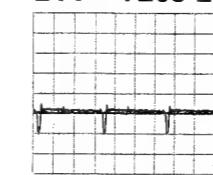
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10 uS/div

B70 7671-D



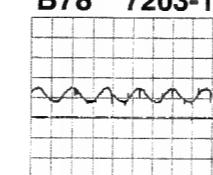
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5 uS/div

B77 7203-2



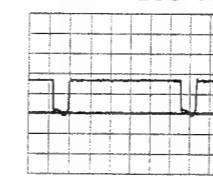
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10 uS/div

B78 7203-10



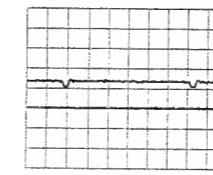
2 V/div AC
50 nS/div

B79 7203-13



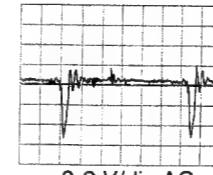
2 V/div AC
5 uS/div

B80 7203-29



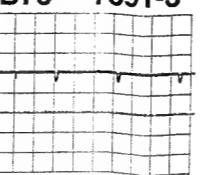
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5 uS/div

B81 6243-N



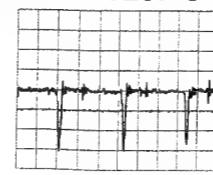
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5 uS/div

B75 7591-3



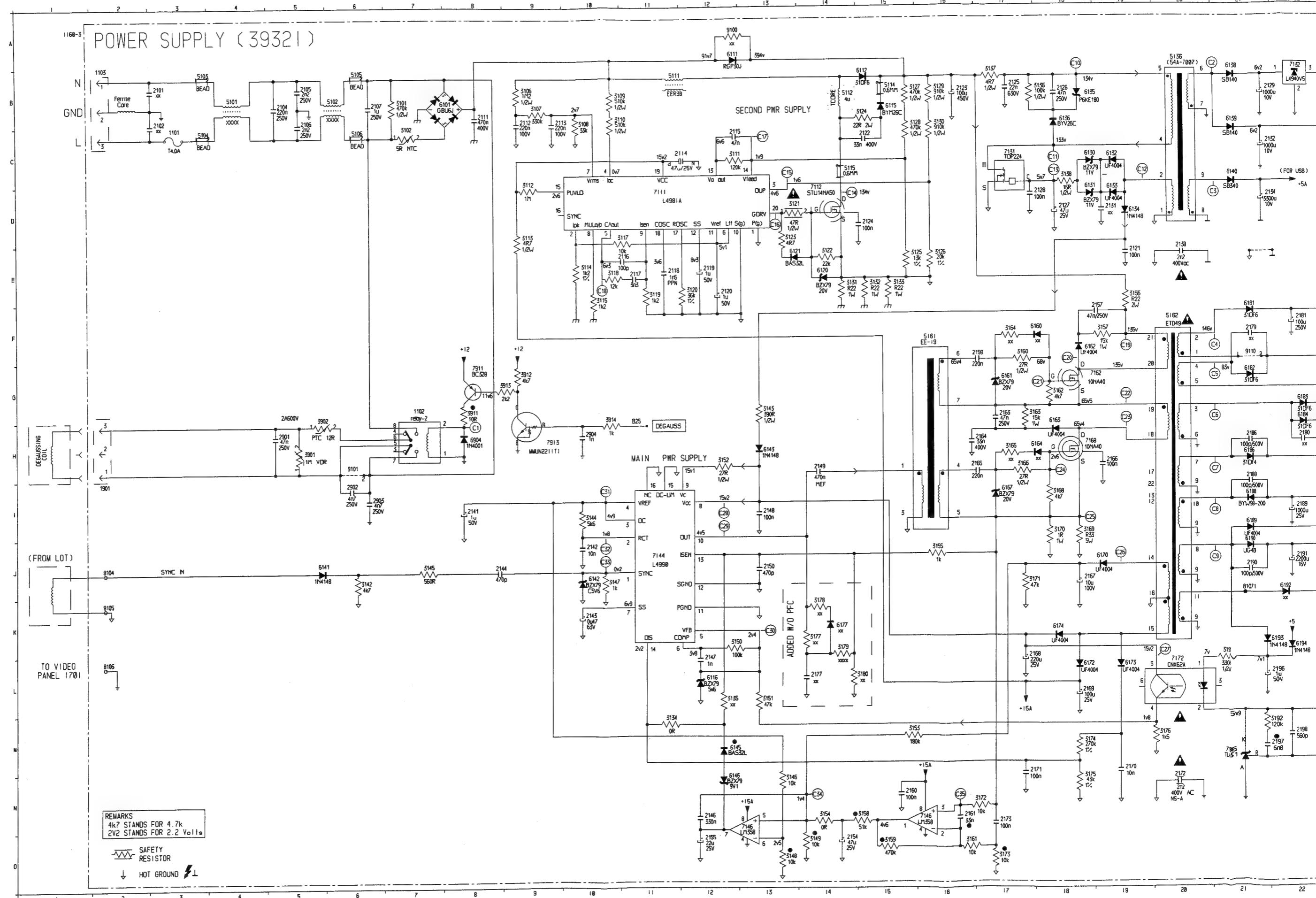
1 V/div AC
10 uS/div

B82 7257-C



50 mV/div AC
10 uS/div

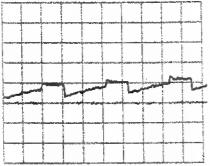
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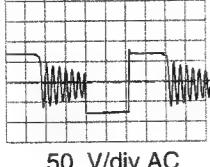
Waveforms for Diagram C

Main Panel

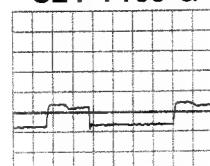
C22 5162-16



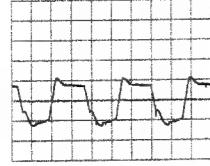
C23 5162-15



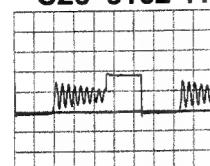
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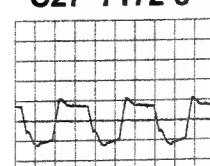
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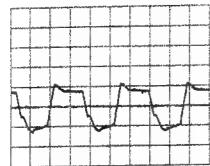
C26 5162-11



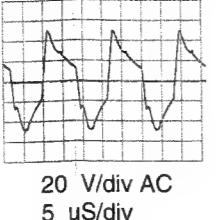
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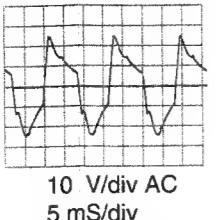
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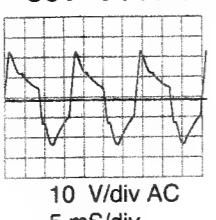
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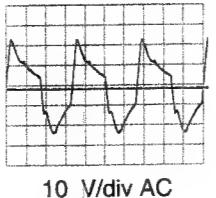
C30 7144-5



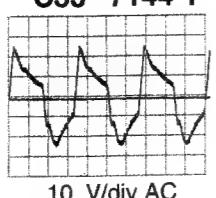
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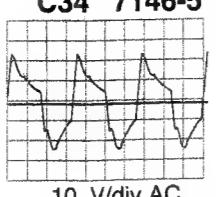
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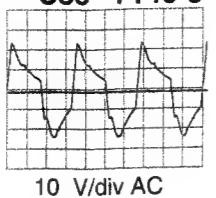
C33 7144-1



C34 7146-5

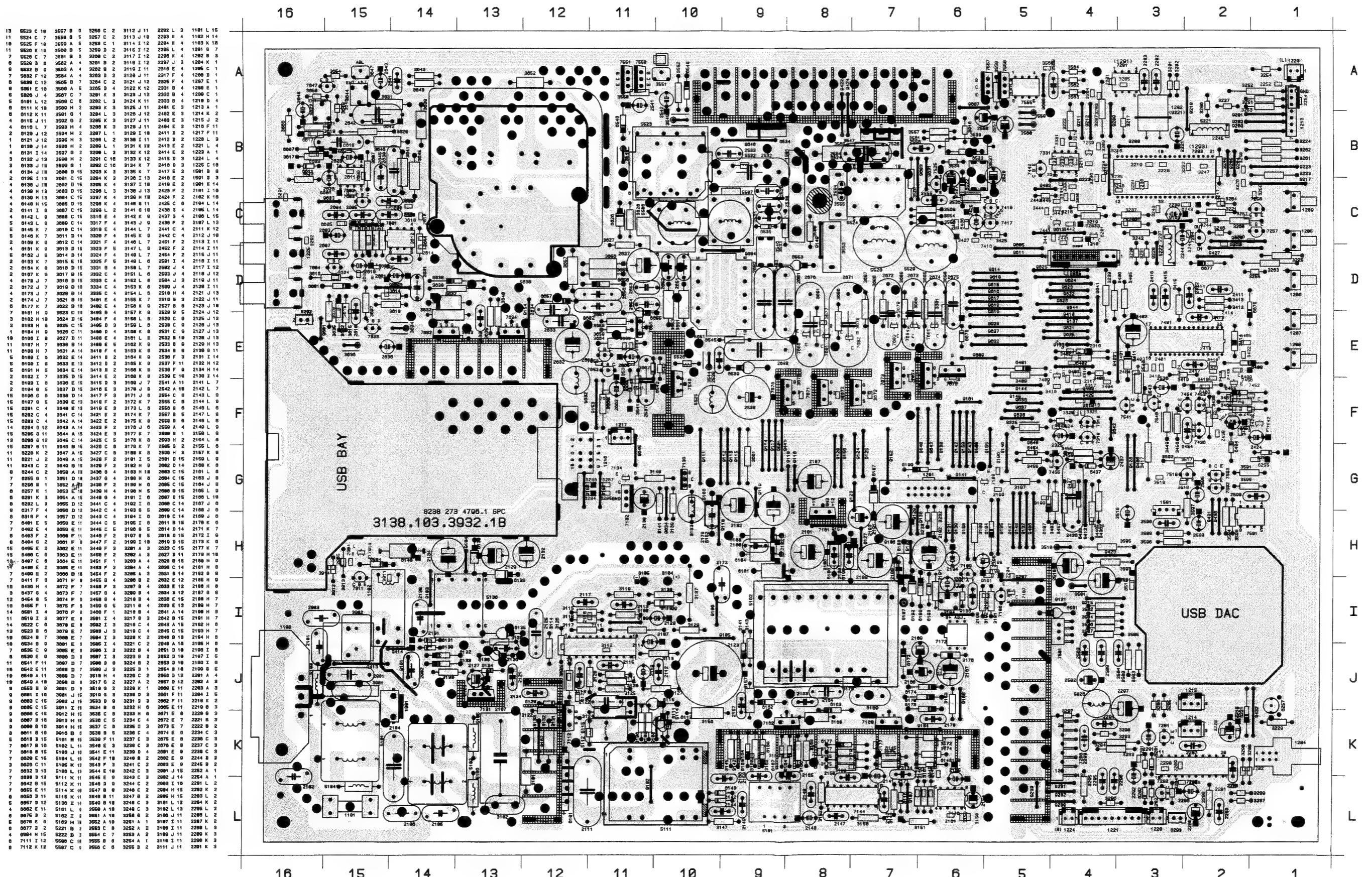


C35 7146-3



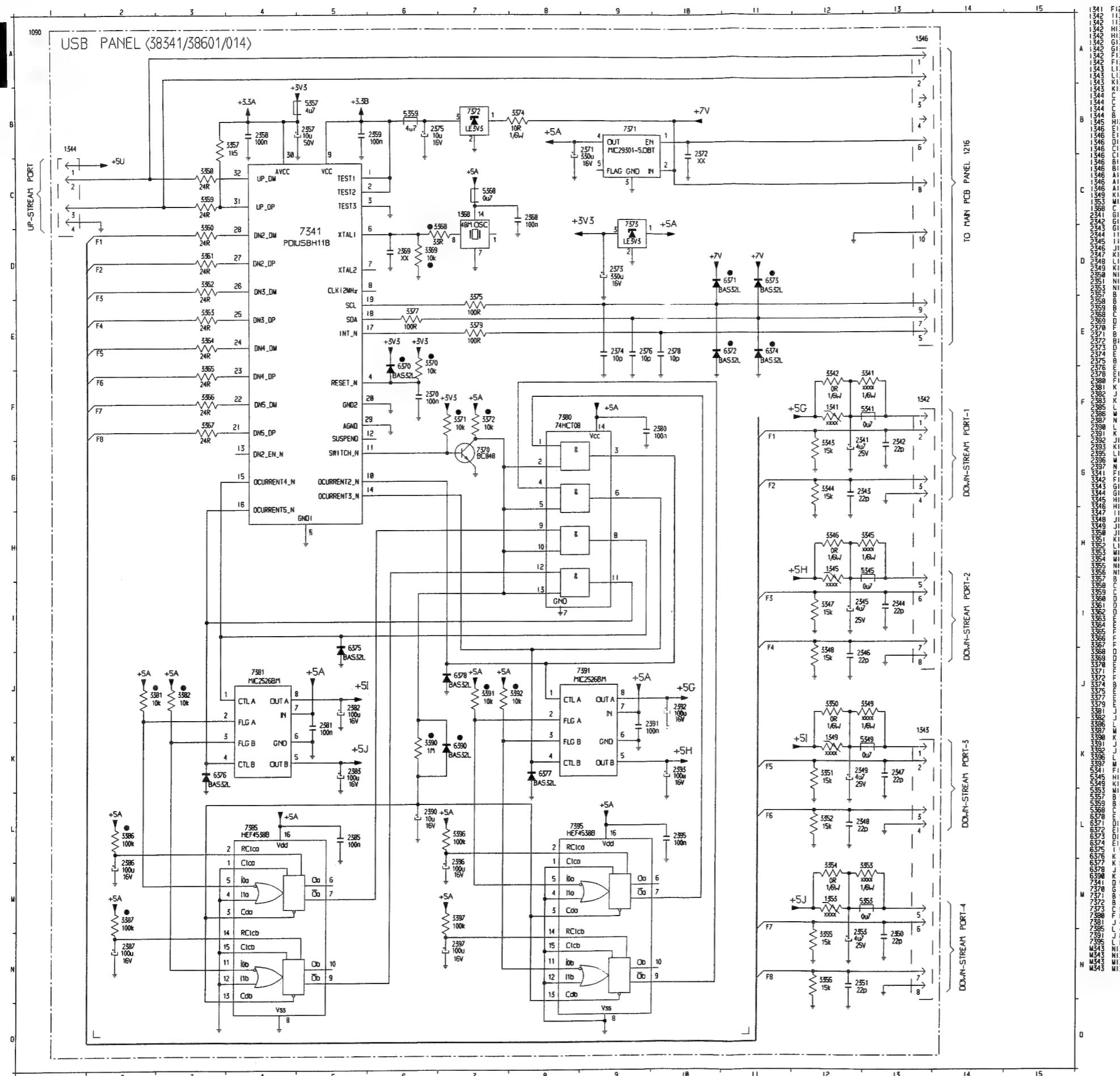
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 0142 S 8 7193 0 10 5525 F 18 3559 A 5 3258 C 1 3114 I 12 2294 K 4 1183 K 15
 0143 S 8 7194 0 11 5626 E 19 3560 B 9 3259 D 2 3115 I 12 2295 L 4 1181 S 7
 0144 F 5 7144 L 7 5528 C 7 3557 B 8 3259 C 2 3115 I 12 2295 L 4 1181 S 9
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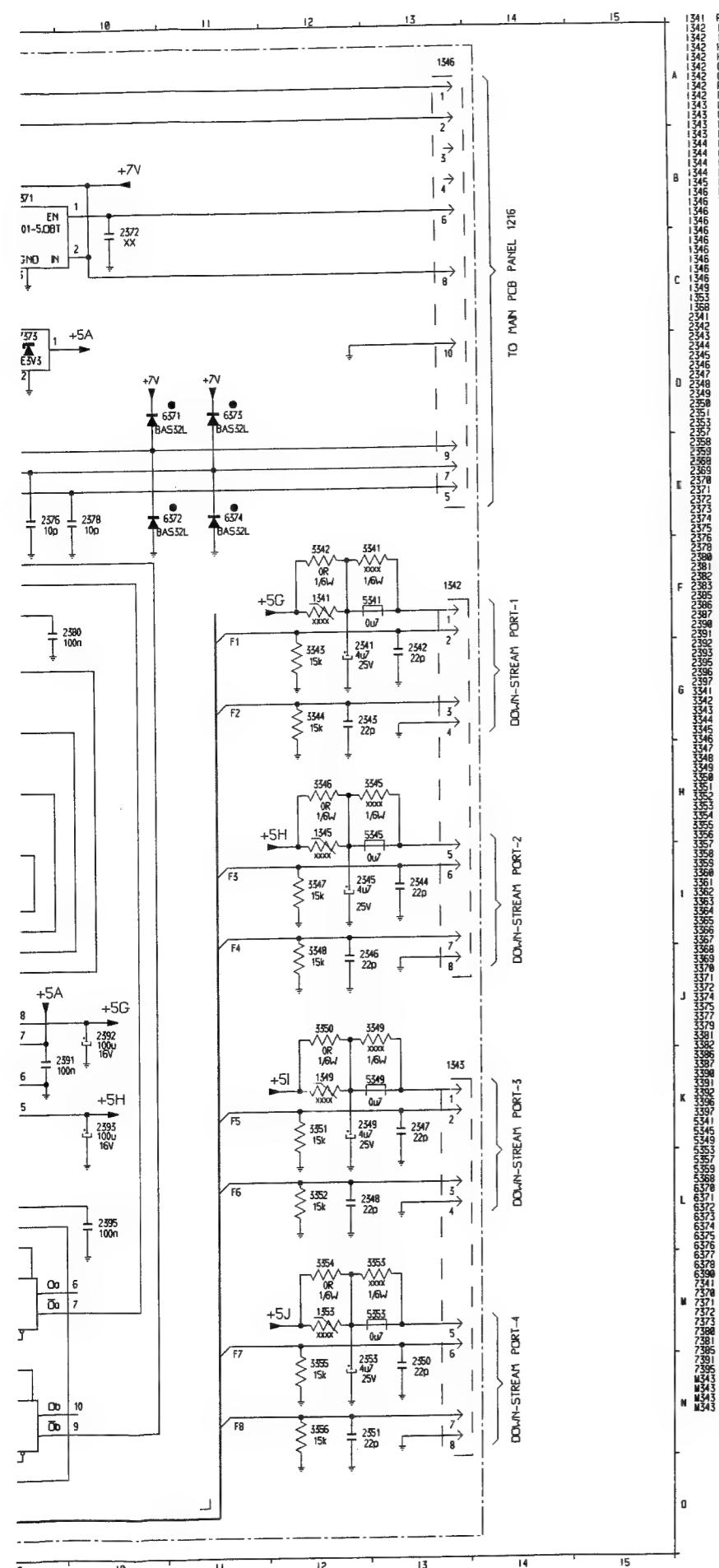
Main Panel C.B.A. (B1, B2, B3, C and D)



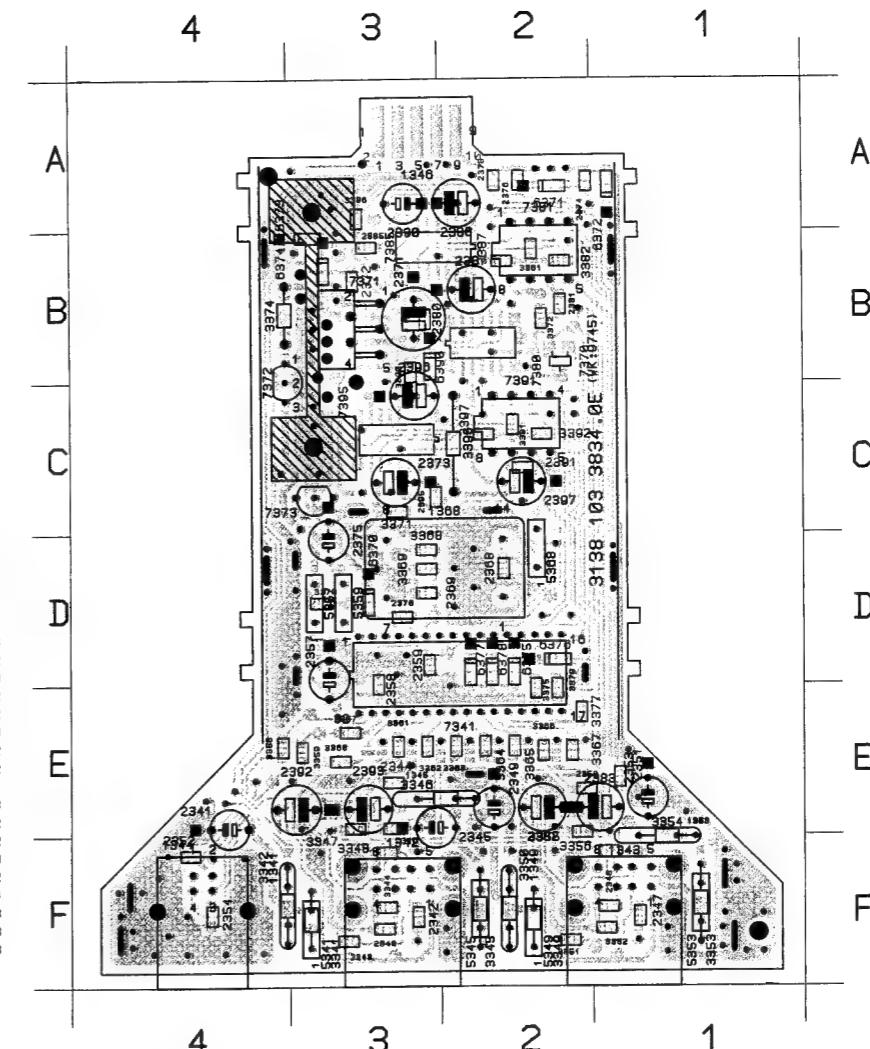
USB (option)

D





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5357 D 3	3341 F 3	1342 F 3
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5370 D 3	3344 F 3	1345 E 3
6371 A 2	3345 F 2	1346 A 3
6372 A 1	3346 E 2	1349 F 2
6373 B 3	3347 E 3	1353 F 1
6374 B 3	3348 F 3	1366 D 2
6375 E 2	3349 F 2	2341 E 4
6376 D 2	3350 F 2	2342 F 3
6377 E 2	3351 F 2	2343 F 3
6378 E 2	3352 F 1	2344 E 3
6398 B 3	3353 F 1	2345 E 2
7341 D 3	3354 F 1	2346 E 3
7370 B 2	3355 E 2	2347 F 1
7371 B 3	3356 F 1	2348 F 3
7372 B 4	3357 E 3	2349 E 2
7373 C 3	3358 E 4	2358 E 3
7388 B 2	3359 E 3	2351 E 2
7381 A 2	3360 E 3	2352 F 2
7385 A 2	3361 E 3	2353 E 2
7391 C 2	3362 E 3	2354 F 2
7395 C 3	3363 E 2	2357 E 2
	3364 E 2	2358 D
	3365 E 2	2359 D
	3366 E 2	2368 D
	3367 E 2	2369 D
	3368 D 3	2370 D
	3369 D 3	2371 B
	3370 D 3	2372 B
	3371 C 3	2373 C
	3372 B 2	2374 A
	3374 B 4	2375 D
	3375 D 2	2376 A
	3377 E 2	2378 A
	3379 D 2	2380 B
	3381 B 2	2381 B
	3382 B 2	2382 E
	3386 A 3	2383 E
	3387 B 2	2385 B
	3390 B 3	2386 A
	3391 C 2	2387 B
	3392 C 2	2390 A
	3396 C 2	2391 C
	3397 C 2	2392 E
	5341 F 3	2393 E
	5345 F 2	2395 C
	5349 F 2	2396 C



Key Control

6

A

8

□

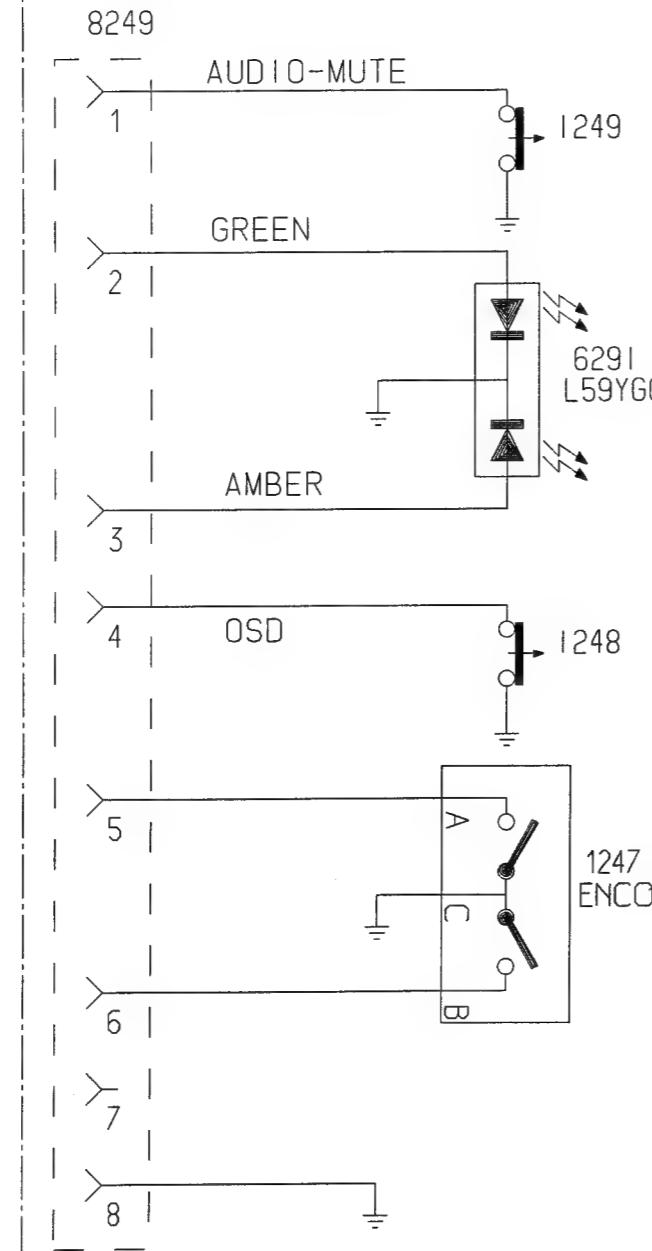
□

6

1163

KEY CONTROL PANEL

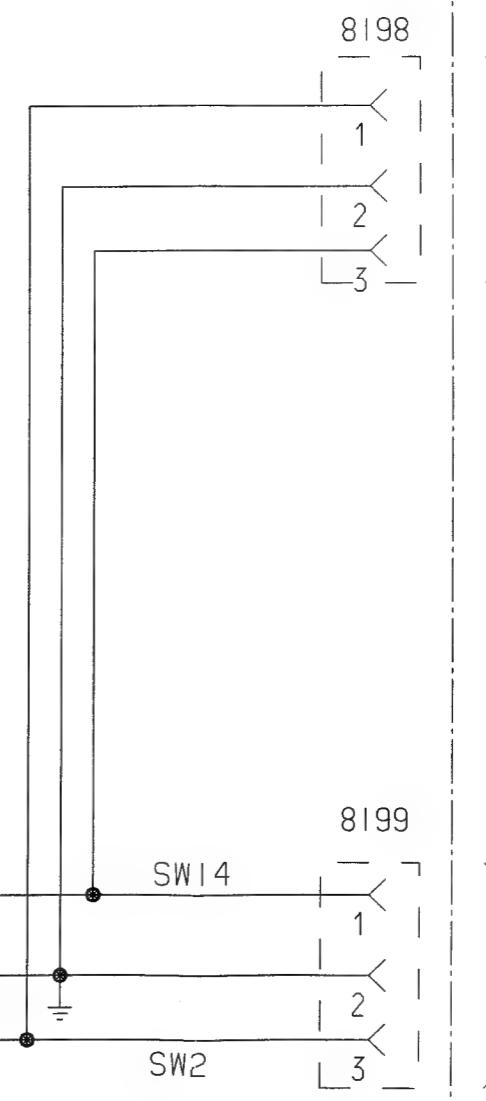
(39711/39731/014)



TO MAIN PANEL | 2 | 3

1164

PWR SWITCH PANEL (39721/39731/014)

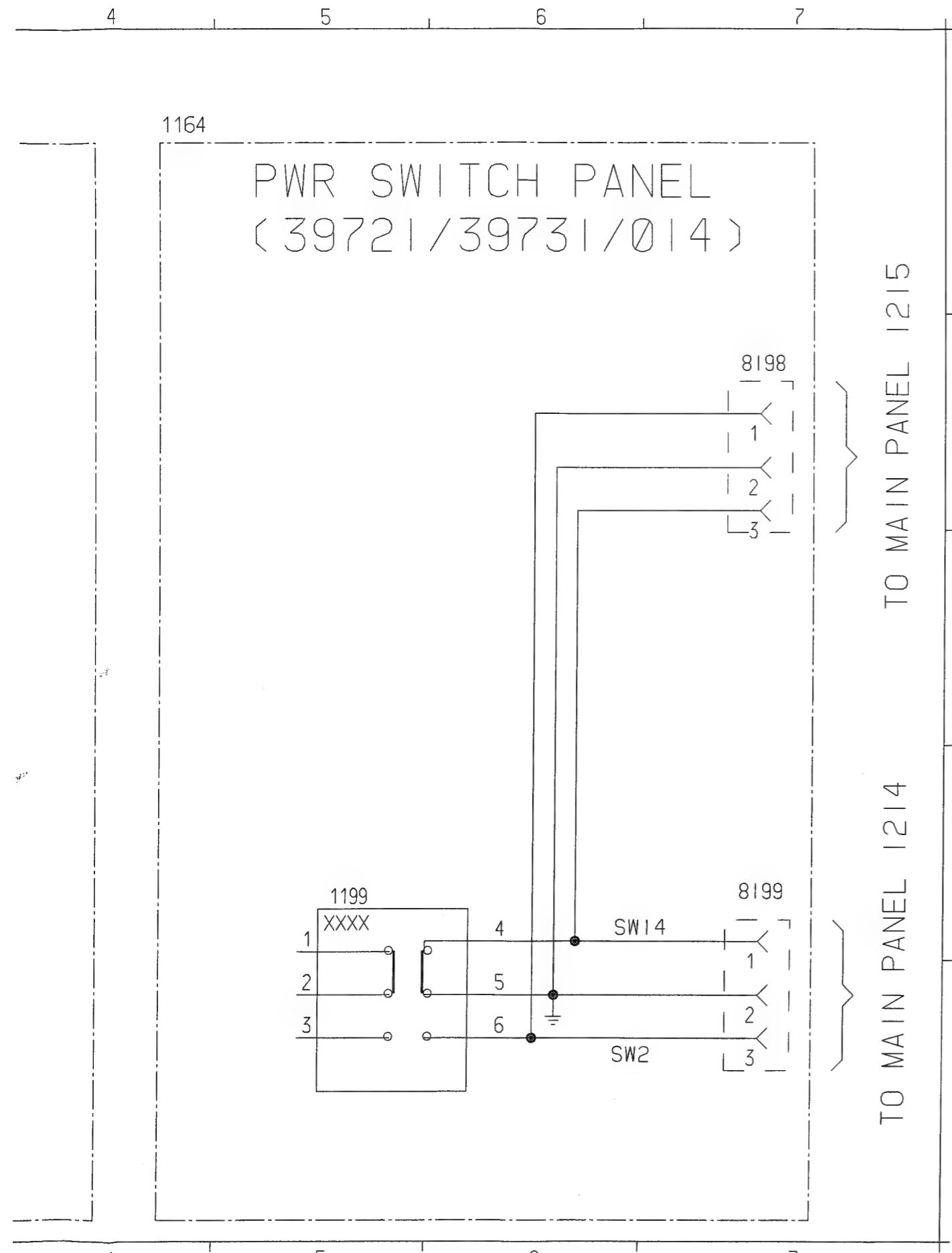


TO MAIN PANEL 1215

TO MAIN PANEL | 2 | 4

1199
1247
1248
1249
6291
8198
8198
8198
8199
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8199
8249
8249
8249
8249
8249
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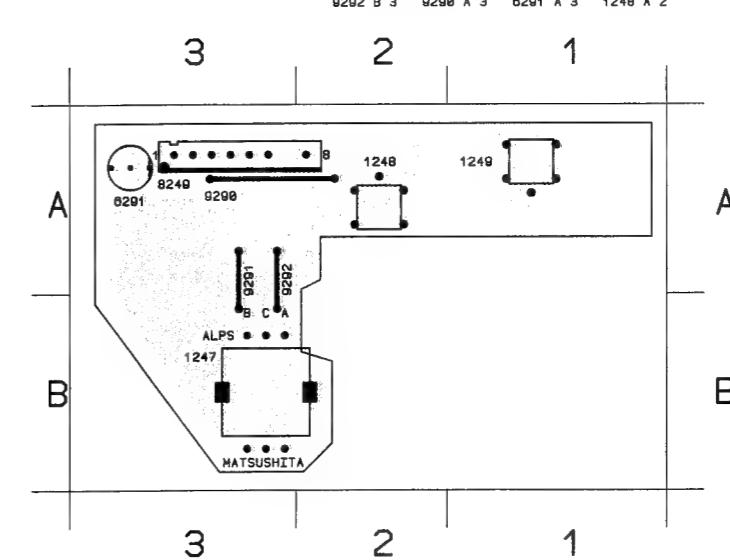
Rotary Panel



1199	D 5
1247	D 3
1248	C 3
1249	B 3
6291	C 3
8198	B 7
8198	B 7
8198	B 7
8199	E 7
8199	D 7
8199	D 7
8249	B 1
8249	B 1
8249	E 1
8249	E 1
8249	D 1
8249	D 1
8249	C 1
8249	C 1

A B C D E

9291 B 3 8249 A 3 1249 A 1 1247 B 3
9292 B 3 9290 A 3 6291 A 3 1248 A 2



0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential!

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

DISMOUNTING

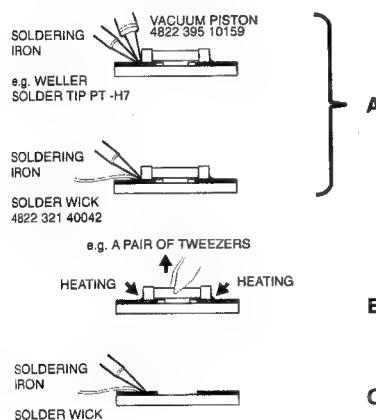


Fig. 1

- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1C).

1.3 Caution on removal

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 2A).
- Next complete the soldering of the terminals of the component (see Fig. 2B).

MOUNTING

e.g. A PAIR OF TWEEZERS

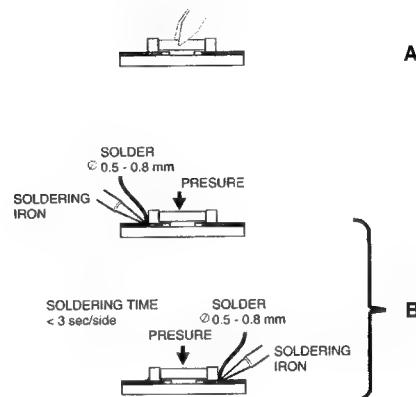


Fig. 2

2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).

EXAMPLES

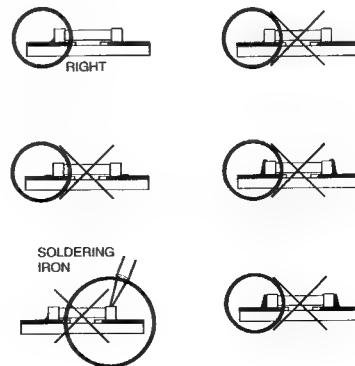
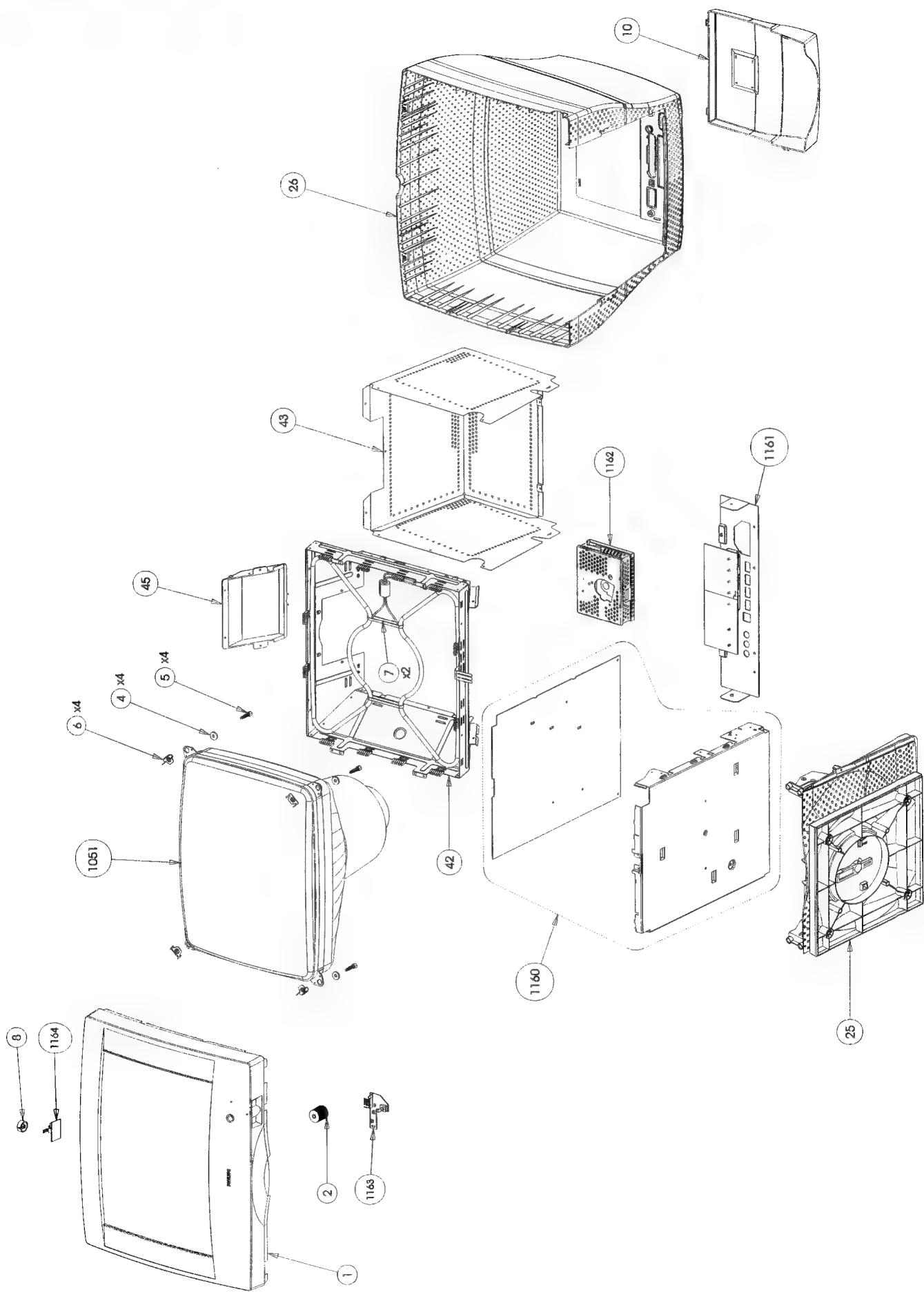


Fig. 3

Exploded View



Spare parts list

21" CM5800

29

Parts indicated on

exploded view:
Model: 21A582BH/00C

3126	4822 050 22003	20k 1% 0.6W	3239	4822 050 23303	33k 1% 0.6W	3508	4822 050 24701	470Ω 1% 0.6W	3647	4822 100 11585	22k 30%LIN 0.1W
3127	4822 050 24704	470k 1% 0.6W	3240	4822 050 21001	100Ω 1% 0.6W	3509	4822 050 22208	20Ω 1% 0.6W	3648	4822 117 10833	10k 1% 0.1W
3128	4822 050 24704	470k 1% 0.6W	3241	4822 051 20101	100Ω 5% 0.1W	3510▲	4822 052 11228	202Ω 5% 0.5W	3649	4822 050 22702	2k 1% 0.6W
3129	4822 050 29104	910k 1% 0.6W	3242	4822 050 21001	100Ω 1% 0.6W	3517	4822 051 20472	4k 5% 0.1W	3650	4822 050 21203	12k 1% 0.6W
3130	4822 050 29104	910k 1% 0.6W	3243	4822 051 20008	0Ω JUMP. (SMD)	3518	4822 051 20223	22k 5% 0.1W	3651	4822 053 21224	220k 5% 0.5W
3131	4822 117 11744	0322 5% 1W	3244	4822 051 20822	8k 2.5% 0.1W	3519	4822 051 20223	22k 5% 0.1W	3652	4822 111 50617	2k 2 10% 0.5W
3132	4822 117 11744	0322 5% 1W	3246	4822 050 24702	4k 7 1% 0.6W	3533	4822 050 21501	150Ω 1% 0.6W	3653	4822 053 21104	100k 5% 0.5W
3133	4822 117 11744	0322 5% 1W	3247	4822 051 20101	100Ω 5% 0.1W	3534	4822 050 24709	47Ω 1% 0.6W	3654	4822 050 25602	5k 6 1% 0.6W
3134	5322 116 51882	0Ω jumper FR25)	3248	4822 051 20472	4k 7 5% 0.1W	3535▲	4822 117 10833	10k 1% 0.1W	3655	4822 117 10118	1M 5% 0.5W
3136	4822 050 21004	100k 1% 0.6W	3249	4822 050 24702	4k 7 1% 0.6W	3536	4822 052 11228	27Ω 5% 0.5W	3656	4822 117 10118	1M 5% 0.5W
3137	4822 050 24708	4Ω7 1% 0.6W	3250	4822 117 10833	10k 1% 0.1W	3537	4822 117 13284	39Ω 7W	3657	4822 050 21502	1k 5 1% 0.6W
3139	4822 050 21002	1k 1% 0.6W	3251	4822 050 24702	4k 7 1% 0.6W	3538	4822 117 13285	2k 2 3W	3658	4822 050 23302	3k 3 1% 0.6W
3140	4822 050 23301	330Ω 1% 0.6W	3252	4822 050 22201	220Ω 1% 0.6W	3540▲	4822 052 10828	8Ω 2.5% 0.33W	3659	4822 050 21002	1k 1% 0.6W
3141	4822 050 21501	150Ω 1% 0.6W	3253	4822 050 24702	4k 7 1% 0.6W	3541	4822 050 24709	47Ω 1% 0.6W	3660	4822 050 23903	39k 1% 0.6W
3142	4822 050 24702	4k 7 1% 0.6W	3254	4822 050 22201	220Ω 1% 0.6W	3542	4822 050 21003	10k 1% 0.6W	3661	4822 050 24701	470Ω 1% 0.6W
3143	4822 050 23901	390Ω 1% 0.6W	3255	4822 050 21503	15k 1% 0.6W	3543	4822 050 21202	1k 2 1% 0.6W	3662	4822 051 20223	22k 5% 0.1W
3144	4822 050 25602	5k 6 1% 0.6W	3260	4822 050 22203	22k 1% 0.6W	3544▲	4822 052 11108	1Ω 5% 0.5W	3663	4822 051 20104	100k 5% 0.1W
3145	4822 050 25601	560Ω 1% 0.6W	3261	4822 050 21001	100Ω 1% 0.6W	3545	4822 117 10442	10Ω 5% 0.5W	3664	4822 117 10118	1M 5% 0.5W
3146	4822 050 11003	10k 1% 0.4W	3262	4822 050 21001	100Ω 1% 0.6W	3546	4822 117 12941	33Ω 5% 7W	3665	4822 051 20302	3k 5% 0.1W
3147	4822 050 21002	1k 1% 0.6W	3263	4822 050 21001	100Ω 1% 0.6W	3547	4822 117 13081	68Ω 1% 0.5W	3666	4822 050 21002	1k 1% 0.6W
3148	4822 117 10833	10k 1% 0.1W	3264	4822 050 21001	100Ω 1% 0.6W	3552	4822 050 26801	68Ω 2 1% 0.6W	3671	4822 051 20104	100k 5% 0.1W
3149	4822 117 10833	10k 1% 0.1W	3265	4822 051 20008	0Ω JUMP. (SMD)	3553	4822 117 12675	150Ω 5% 5W	3675	4822 051 20104	100k 5% 0.1W
3150	4822 050 21004	100k 1% 0.6W	3316	4822 051 20472	4k 7 5% 0.1W	3554	4822 050 24701	47Ω 1% 0.6W	3676	4822 051 20104	100k 5% 0.1W
3151	4822 050 24703	47k 1% 0.6W	3317	4822 051 20472	4k 7 5% 0.1W	3555	4822 117 12675	150Ω 5% 5W	3677	4822 051 20008	0Ω JUMP. (SMD)
3152	4822 050 22709	27Ω 1% 0.6W	3318	4822 051 20154	150k 5% 0.1W	3556	4822 050 24701	470Ω 1% 0.6W	3678	4822 051 20008	0Ω JUMP. (SMD)
3153	4822 050 22204	220Ω 1% 0.6W	3321	4822 051 20472	4k 7 5% 0.1W	3557	4822 050 23909	39Ω 1% 0.6W	3679	4822 051 20008	0Ω JUMP. (SMD)
3154	4822 050 23303	33k 1% 0.6W	3323	4822 050 21002	1k 1% 0.6W	3558▲	4822 052 11828	8Ω 2.5% 0.5W	3680	4822 051 20008	0Ω JUMP. (SMD)
3155	4822 050 21002	1k 1% 0.6W	3324	4822 117 11449	2k 2 1% 0.1W	3559	4822 050 24701	470Ω 1% 0.6W	3681	4822 051 20008	0Ω JUMP. (SMD)
3156	4822 117 12672	0Ω22 55 2W	3325▲	4822 052 10478	4Ω7 5% 0.33W	3560▲	4822 052 11828	8Ω 2.5% 0.5W	3685	4822 050 22202	2k 2 1% 0.6W
3157	4822 117 11973	15k 5% 1W	3331	4822 051 20101	100Ω 5% 0.1W	3561	4822 050 23909	39Ω 1% 0.6W	3686	4822 050 11003	10k 1% 0.4W
3158	4822 117 10833	10k 1% 0.1W	3332	4822 117 10834	47k 1% 0.1W	3562	4822 050 21001	100Ω 1% 0.6W	3687	4822 050 11003	10k 1% 0.4W
3159	4822 051 20684	68Ω 5% 1W	3333	4822 117 10834	47k 1% 0.1W	3563	4822 050 21203	12Ω 1% 0.6W	3688	4822 050 11003	10k 1% 0.4W
3160	4822 050 22709	27Ω 1% 0.6W	3334	4822 051 20101	100Ω 5% 0.1W	3564	4822 050 22702	2k 7 1% 0.6W	3689	4822 050 11003	10k 1% 0.4W
3161	4822 050 11003	10k 1% 0.4W	3335	4822 051 20101	100Ω 5% 0.1W	3565	4822 117 13286	2Ω 2.5W	3690	4822 050 11003	10k 1% 0.4W
3162	4822 050 24702	4k 7 1% 0.6W	3401	4822 051 20471	47Ω 5% 0.1W	3566	4822 117 11383	12k 1% 0.1W	3691	4822 050 11003	10k 1% 0.4W
3163	4822 117 11973	15k 5% 1W	3402	4822 050 24701	47Ω 1% 0.6W	3567	4822 050 24708	4Ω7 1% 0.6W	3901	4822 116 21237	1M A/100V
3166	4822 050 22709	27Ω 1% 0.6W	3403	4822 050 21001	100Ω 1% 0.6W	3568	4822 050 21002	1k 1% 0.6W	3911	4822 051 20109	10Ω 5% 0.1W
3168	4822 050 24702	4k 7 1% 0.6W	3404	4822 117 10833	10k 1% 0.1W	3569	4822 050 24708	4Ω7 1% 0.6W	3912	4822 050 24702	4k 7 1% 0.6W
3169	4822 117 12671	0Ω23 5% 5W	3405	4822 050 21001	100Ω 1% 0.6W	3570	4822 050 11003	10k 1% 0.4W	3913	4822 116 82046	2k 2 5% 1/6W
3170	4822 053 10108	1Ω 5% 1W	3406	4822 050 21001	100Ω 1% 0.6W	3592	4822 050 21203	12k 1% 0.6W	3914	4822 051 20102	1k 5% 0.1W
3171	4822 117 10834	47k 1% 0.1W	3408	4822 050 24701	47Ω 1% 0.6W	3593▲	4822 052 10479	4Ω7 5% 0.33W	3916	4822 050 24701	470Ω 1% 0.6W
3172	4822 050 11003	10k 1% 0.4W	3409	4822 050 22202	2k 2 1% 0.6W	3594	4822 050 11003	10k 1% 0.4W			
3173	4822 117 10833	10k 1% 0.1W	3410	4822 117 11449	2k 2 1% 0.1W	3595▲	4822 052 10479	4Ω7 5% 0.33W	5101	4822 157 71663	LINE TER
3174	4822 050 22704	27Ω 1% 0.6W	3411	4822 051 20332	3k 3 5% 0.1W	3596	4822 050 24701	47Ω 1% 0.6W	5102	4822 157 71663	LINE TER
3175	4822 050 24303	43k 1% 0.6W	3412	4822 050 25101	51Ω 1% 0.6W	3597	4822 050 22209	22Ω 1% 0.6W	5103	4822 526 10522	IND FXD BEAD
3176	4822 050 21502	1k 5 1% 0.6W	3413	4822 050 22702	2k 7 1% 0.6W	3598	4822 050 22202	2k 2 1% 0.6W	5104	4822 526 10522	IND FXD BEAD
3181	4822 117 12755	12Ω 1% 0.6W	3414	4822 050 24702	4k 7 1% 0.6W	3599	4822 050 23303	33k 1% 0.6W	5105	4822 526 10522	IND FXD BEAD
3182	4822 050 24703	47k 1% 0.6W	3415	4822 116 52257	22k 5% 0.5W	3600	4822 117 10834	47k 1% 0.1W	5106	4822 526 10522	IND FXD BEAD
3183	4822 050 21808	1Ω 8 1% 0.6W	3416	4822 051 20471	4k 7 5% 0.1W	3601	4822 050 22202	2k 2 1% 0.6W	5107	4822 051 20028	EMI 0.7U B
3188	4822 051 20474	47k 5% 0.1W	3417	4822 050 26803	68k 1% 0.6W	3602	4822 117 12755	120Ω 1% 0.6W	5108	4822 116 40144	12Ω
3189	4822 050 24702	4k 7 1% 0.6W	3418	4822 050 22204	220Ω 1% 0.6W	3603	4822 050 21004	100Ω 1% 0.6W	5111	4822 157 72070	PFC CHOKE
3190	4822 051 20224	220Ω 5% 0.1W	3419	4822 050 26803	68k 1% 0.6W	3604	4822 050 28202	8Ω 2 1% 0.6W	5112	4822 158 72130	T CORE
3191	4822 050 23301	330Ω 1% 0.6W	3421	4822 117 11383	12k 1% 0.1W	3605	4822 050 22709	27Ω 1% 0.6W	5136	3138 128 78010	USB
3192	4822 050 21204	120Ω 1% 0.6W	3422	4822 117 11449	2k 2 1% 0.1W	3607	4822 050 11003	10k 1% 0.4W	5161	3138 128 73760	TRANSFORMER
3193	4822 051 20102	1k 5 1% 0.1W	3423	4822 051 20124	120k 5% 0.1W	3608	4822 051 20154	150k 5% 0.1W	5162▲	3138 178 72170	POWER TRANSFORMER
3194	4822 101 11743	500Ω LIN CERMET	3424	4822 051 20008	0Ω JUMP. (SMD)	3611	4822 050 28201	820Ω 1% 0.6W	5221	4822 157 53189	CHOKE COIL
3195	4822 050 21202	1k 2 1% 0.6W	3425	4822 050 24708	4Ω7 1% 0.6W	3612	4822 051 20562	5k 6 5% 0.1W	5222	4822 157 53189	CHOKE COIL
3196	4822 117 11507	6k 8 1% 0.1W	3426	4822 117 11449	2k 2 1% 0.1W	3613	4822 050 22201	220Ω 1% 0.6W	5506	4822 157 71419	5.0μH PM10
3197	4822 050 21002	1k 1% 0.6W	3427	4822 051 20472	4k 7 5% 0.1W	3614	4822 116 52257	22k 5% 0.5W	5507	4822 157 11201	H SHIFT CHOKE COIL
3199	4822 051 20008	0Ω JUMP. (SMD)	3428	4822 117 10833	10k 1% 0.1W	3615	4822 050 11252	22k 5% 0.5W	5523	4822 146 10737	CHOKES
3											

6111 4822 130 80572 RGP30J	6626 4822 130 31393 BYT52J	7603 4822 130 42231 BC557C	3002 4822 051 20334 330k 5% 0.1W
6112 4822 130 10746 31DF6	6632 4822 130 10746 31DF6	7604 4822 130 44196 BC548C	3003 4822 051 20759 75Ω 5% 0.1W
6115 5322 130 10709 BYM26C	6638 4822 130 30621 1N4148	7605 5322 130 42756 BC857C	3004 4822 051 20759 75Ω 5% 0.1W
6116 4822 130 34173 BZX79-B5V6	6642 4822 130 34685 BZX79-B75	7632 5322 130 63002 IRF640	3005 4822 051 20759 75Ω 5% 0.1W
6120 4822 130 34499 BZX79-B20	6655 4822 130 60815 BYV26E	7633 4822 130 63081 BSN254A	3006 4822 051 20759 75Ω 5% 0.1W
6121 4822 130 80446 BAS32L	6656 5322 130 32274 BY584	7634 4822 130 11232 STU8NA80	3007 4822 051 20759 75Ω 5% 0.1W
6130 4822 130 34488 BZX79-B11	6657 5322 130 32274 BY584	5322 390 20011 VET SILIC.P4	3008 4822 117 11449 2K2 1% 0.1W
6131 4822 130 34488 BZX79-B11		5322 390 20011 VET SILIC.P4	3009 4822 117 11449 2K2 1% 0.1W
6132 4822 130 10742 UF4004	6662 4822 130 34197 BZX79-B12	20GR	3010 4822 117 11449 2K2 1% 0.1W
6133 4822 130 10742 UF4004	6675 4822 130 30621 1N4148	7647 4822 130 44196 BC548C	3011 4822 117 11449 2K2 1% 0.1W
6134 4822 130 30621 1N4148	6676 4822 130 34233 BZX79-B5V1	7651 4822 130 70025 BUX87P	3012 4822 051 20479 47Ω 5% 0.1W
6135 5322 130 80282 P6KE180A	6677 4822 130 30621 1N4148	7652 4822 130 44196 BC548C	3013 4822 051 20479 47Ω 5% 0.1W
6136 4822 130 32343 BYV26C	6904 4822 130 31438 1N4001G	7653 4822 130 44196 BC548C	3014 4822 051 20479 47Ω 5% 0.1W
6138 5322 130 81917 SB140		7671 5322 130 63002 IRF640	3015 4822 051 20479 47Ω 5% 0.1W
6139 5322 130 81917 SB140		5322 390 20011 VET SILIC.P4	3016 4822 051 20479 47Ω 5% 0.1W
6140 4822 130 32715 SB340		20GR	3017 4822 051 20479 47Ω 5% 0.1W
6141 4822 130 30621 1N4148	7111 4822 209 16121 L4981A	7672 5322 130 63002 IRF640	3018 4822 051 20101 100Ω 5% 0.1W
6142 4822 130 34173 BZX79-B5V6	7112 4822 130 11117 STU14NA50	5322 390 20011 VET SILIC.P4	3019 4822 051 20471 47Ω 5% 0.1W
6143 4822 130 30621 1N4148	5322 390 20011 VET SILIC.P4	7673 5322 130 63002 IRF640	3020 4822 050 21001 100Ω 1% 0.6W
6145 4822 130 80446 BAS32L		5322 390 20011 VET SILIC.P4	
6146 4822 130 30862 BZX79-B9V1	7131 4822 130 11233 TOP224Y	20GR	3021 4822 051 20301 300Ω 5% 0.1W
6161 4822 130 34499 BZX79-B20	7132 4822 209 13061 L4940V5	7674 5322 130 63002 IRF640	3022 4822 051 20229 22Ω 5% 0.1W
6162 4822 130 10742 UF4004	7133 4822 130 40995 BD438	5322 390 20011 VET SILIC.P4	3023 4822 051 20101 100Ω 5% 0.1W
6163 4822 130 10742 UF4004	7134 4822 130 10828 MUN2211J	20GR	3024 4822 051 20101 100Ω 5% 0.1W
6167 4822 130 34499 BZX79-B20	7144 4822 209 16097 L4990	7675 5322 130 63002 IRF640	3025 4822 051 20569 56Ω 5% 0.1W
6170 4822 130 10742 UF4004	7146 4822 209 70672 LM358N SEL.	7676 5322 130 63002 IRF640	3026 4822 051 20101 100Ω 5% 0.1W
6172 4822 130 10742 UF4004	7162 4822 130 10831 STP10NA40	5322 390 20011 VET SILIC.P4	3027 4822 051 20101 100Ω 5% 0.1W
6173 4822 130 10742 UF4004	7168 4822 130 10831 STP10NA40	20GR	3028 4822 051 20101 100Ω 5% 0.1W
6174 4822 130 10742 UF4004	5322 390 20011 VET SILIC.P4	7681 4822 130 10829 MUN2211J	3029 4822 051 20101 100Ω 5% 0.1W
6181 4822 130 10746 31DF6	7172 4822 130 80908 CNX62A	7682 4822 130 10829 MUN2211J	3030 4822 051 20102 1k 5% 0.1W
6182 4822 130 10746 31DF6	7181 4822 209 81726 MC7812CT	7683 4822 130 10829 MUN2211J	3031 4822 051 20569 56Ω 5% 0.1W
6183 4822 130 10746 31DF6	5322 390 20011 VET SILIC.P4	7684 4822 130 10829 MUN2211J	3032 4822 051 20339 33Ω 5% 0.1W
6184 4822 130 10746 31DF6	20GR	7685 4822 130 10829 MUN2211J	3033 4822 051 20339 33Ω 5% 0.1W
6186 4822 130 11113 31DF4-FC5	7186 4822 209 81397 TL431CLPST	7686 4822 130 10829 MUN2211J	3034 4822 051 20339 33Ω 5% 0.1W
6187 4822 130 41601 BYV95A	7187 4822 130 10829 MUN2211J	7911 4822 130 44104 BC328	
6188 4822 130 83909 BYW98-200RL	7188 4822 130 42513 BC858C	7913 4822 130 10829 MUN2211J	
6189 4822 130 10742 UF4004	7201	4822 502 21358 SCREW W/SPRING WASHER M4X10	
6190 4822 130 10835 UG48			
6191 4822 130 80446 BAS32L			
6193 4822 130 30621 1N4148			
6194 4822 130 30621 1N4148			
6196 4822 130 30621 1N4148	7203 4822 209 16417 P83C380AER/016	Various	
6197 4822 130 30621 1N4148	7257 5322 130 60068 BC558C	1170 3138 128 63720 TERMINAL PCB ASSY	
6201 5322 130 34337 BA9V9	7258 4822 130 44196 BC548C	1001 4822 277 21595 SWI SLI B	
6202 4822 130 80446 BAS32L	7259 5322 130 42136 BC848C	1008 4822 267 10752 9P. MALE	
6203 4822 130 80446 BAS32L	7317 5322 130 42136 BC848C	1009 4822 265 10782 887 BM M 6P M2.50 RED II	
6204 4822 130 80446 BAS32L	7318 4822 130 41594 PH2369	1010 4822 265 10458 15P F 0.85	
6205 4822 130 80446 BAS32L	7319 4822 130 41594 PH2369	1002 4822 265 11176 75 OHM (ZL-6500)	
6206 4822 130 80446 BAS32L	7331 4822 209 15121 ST24LC21B1	1004 4822 265 11176 75 OHM (ZL-6500)	
6207 4822 130 80446 BAS32L	7401 9352 608 03112 TDA4854/V2	1006 4822 265 11176 75 OHM (ZL-6500)	
6221 5322 130 31504 BZX79-B3V3	7409 4822 205 73852 PMBT2369	1008 4822 265 11176 75 OHM (ZL-6500)	
6243 4822 130 80446 BAS32L	7416 5322 130 42136 BC848C	1012 4822 265 11176 75 OHM (ZL-6500)	
6244 4822 130 80446 BAS32L	7417 4822 130 41344 BC337-40	1014 4822 265 11176 75 OHM (ZL-6500)	
6255 4822 130 80446 BAS32L	7418 4822 130 40854 BC327		
6256 4822 130 30621 1N4148	7436 4822 130 44461 BC546B		
6317 4822 130 80446 BAS32L	7441 5322 130 42136 BC848C		
6318 4822 130 80446 BAS32L	7442 5322 130 60068 BC558C		
6401 4822 130 30621 1N4148	7452 4822 130 10829 MUN2211J		
6402 4822 130 30621 1N4148	7453 5322 130 60068 BC558C		
6403 4822 130 80446 BAS32L	7454 4822 130 41646 BF423		
6404 4822 130 30621 1N4148	7455 4822 130 41782 BF422	2001 4822 124 80106 47μF 20% 16V	
6405 4822 130 80446 BAS32L	7456 5322 130 42136 BC848C	2002 4822 126 13196 100nF 10% SMD	
6406 4822 130 80446 BAS32L	7501 4822 209 31472 TDA8179S	2003 4822 124 80106 47μF 20% 16V	
6407 4822 130 80446 BAS32L	4822 492 62076 FOR	2004 4822 124 80106 47μF 20% 16V	
6408 4822 130 30621 1N4148	4822 466 11509 INSULATING PLATE	2005 4822 124 80106 47μF 20% 16V	
6409 4822 130 80446 BAS32L	5322 390 20011 VET SILIC.P4	2006 4822 124 80106 47μF 20% 16V	
6411 5322 130 81917 SB140		2007 4822 124 80106 47μF 20% 16V	
6436 4822 130 30621 1N4148		2008 4822 124 80106 47μF 20% 16V	
6437 4822 130 34328 BZX79-B30		2009 4822 124 80106 47μF 20% 16V	
6454 4822 130 34233 BZX79-B5V1		2010 4822 124 80106 47μF 20% 16V	
6455 4822 130 30621 1N4148	7518 4822 130 44196 BC548C	2011 4822 124 11932 100μF 20% 16V	
6501 5322 130 31969 RGP15M	7525 4822 130 60381 BSN254A	2012 4822 124 80106 47μF 20% 16V	
6519 4822 130 80446 BAS32L	7526 4822 130 10811 2SC3998	2013 4822 126 13196 100nF 10% SMD	
6522 4822 130 42489 BYD33G	4822 492 62076 FOR	2014 4822 122 33177 10nF 20% 50V	
6523 4822 130 31807 RGP10D	4822 466 93161 INSULATION PLATE	2015 4822 122 33177 10nF 20% 50V	
6524 5322 130 32184 BYV27-50	4822 466 11509 INSULATING PLATE	2016 4822 122 33177 10nF 20% 50V	
6534 4822 130 10826 DD50R	5322 390 20011 VET SILIC.P4	2017 4822 122 33177 10nF 20% 50V	
6535 4822 130 34197 BZX79-B12		2018 4822 122 33177 10nF 20% 50V	
6539 4822 130 11113 31DF4-FC5		2019 4822 122 33177 10nF 20% 50V	
6542 4822 130 30621 1N4148	7540 4822 130 44121 BC338	2020 4822 122 33177 10nF 20% 50V	
6548 4822 130 31607 RGP10D	7541 4822 130 44104 BC328	2021 4822 122 33177 10nF 20% 50V	
6549 4822 130 31607 RGP10D	7542 5322 130 42136 BC848C	2022 4822 122 33177 10nF 20% 50V	
6553 4822 130 60815 BYV28E	7543 4822 130 10788 MTP5P25	2023 4822 122 33177 10nF 20% 50V	
6601 4822 130 31607 RGP10D	5322 390 20011 VET SILIC.P4	2024 4822 122 33177 10nF 20% 50V	
6603 4822 130 80446 BAS32L		2025 4822 122 33177 10nF 20% 50V	
6605 4822 130 80446 BAS32L	7550 4822 130 63274 2SC2344E	2026 4822 124 11931 1μF 20% 50V	
6606 4822 130 80446 BAS32L	7551 4822 130 63275 2SA1011E	2028 4822 122 33177 10nF 20% 50V	
6607 4822 130 30621 1N4148	7555 4822 209 70672 LM358N SEL.	2029 4822 122 11932 100μF 20% 16V	
6608 4822 130 80446 BAS32L		2030 4822 126 13196 25V	
6611 4822 130 34233 BZX79-B5V1	7557 4822 130 63427 BD534FI		
6613 4822 130 80446 BAS32L	7558 5322 130 42631 BD243		
6617 4822 130 80446 BAS32L	7591 4822 209 70672 LM358N SEL.		
6618 4822 130 80446 BAS32L	7592 4822 130 41053 BC639		
6620 4822 130 80446 BAS32L	7593 4822 130 41087 BC638		
6621 4822 130 80446 BAS32L	7601 4822 209 33432 UC3842BN		
6622 4822 130 80446 BAS32L	7602 4822 209 70672 LM358N SEL.		
6623 4822 130 80446 BAS32L			
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6650 4822 130 80446 BAS32L			
6651 4822 130 80446 BAS32L			
665			

2724	4822 121 70162	10nF 5% 400V	3711	4822 051 20105	1M 5% 0.1W	
2725	4822 121 70162	10nF 5% 400V	3712	4822 051 20101	100Ω 5% 0.1W	
2726	4822 121 70162	10nF 5% 400V	3713	4822 051 20008	0Ω JUMP. (SMD)	
2728	5322 122 33661	100pF 10% 50V	3714	4822 051 20008	0Ω JUMP. (SMD)	
2729	5322 122 32531	100pF 5% 50V	3715	4822 051 20008	0Ω JUMP. (SMD)	
2730	4822 121 70162	10nF 5% 400V	3716	4822 051 20101	100Ω 5% 0.1W	
2731	4822 126 14122	6.8nF 10% 50V	3717	4822 051 20101	100Ω 5% 0.1W	
2732	4822 124 80606	1μF 20% 160V	3718	4822 051 20101	100Ω 5% 0.1W	
2733	4822 126 13196	100nF 10% SMD 25V	3719	4822 051 20105	1M 5% 0.1W	
2735	4822 126 13196	100nF 10% SMD 25V	3721	4822 051 20479	47Ω 5% 0.1W	
2739	5322 122 32531	100pF 5% 50V	3722	4822 051 20479	47Ω 5% 0.1W	
2740	5322 122 32531	100pF 5% 50V	3723	4822 051 20479	47Ω 5% 0.1W	
2741	4822 124 42171	22uF 25V	3724	4822 117 11503	220Ω 1% 0.1W	
2742	4822 121 70162	10nF 5% 400V	3725	4822 051 20101	100Ω 5% 0.1W	
2743	4822 126 14122	6.8nF 10% 50V	3726	4822 051 20101	100Ω 5% 0.1W	
2744	4822 124 80606	1μF 20% 160V	3729	4822 117 11139	1k5 1% 0.1W	
2745	4822 124 41751	47μF 20% 50V	3730	4822 117 10833	10k 1% 0.1W	
2746	4822 124 40433	47μF 20% 25V	3735	4822 117 11449	2k2 1% 0.1W	
2747	4822 121 43693	10nF 100V	3736	4822 051 20331	330Ω 5% 0.1W	
2748	4822 124 41634	22uF ELEC 16V	3737	4822 051 20223	22k 5% 0.1W	
2749	4822 126 13196	100nF 10% SMD 25V	3739	4822 051 20101	100Ω 5% 0.1W	
2750	4822 124 12184	10uF 20% 16V	3740	4822 050 24709	47Ω 1% 0.6W	
			3741	4822 051 20201	200Ω 5% 0.1W	
-II-			3742	4822 051 20223	22k 5% 0.1W	
2751	4822 124 80131	100μF 20% 25V	3743	4822 117 11507	6k8 1% 0.1W	
2752	5322 122 32654	22nF 10% 63V	3744	4822 051 20274	270k 5% 0.1W	
2753	5322 122 32654	22nF 10% 63V	3745	4822 051 20109	10Ω 5% 0.1W	
2754	4822 126 13692	47pF 1% 63V	3746	4822 051 20223	22k 5% 0.1W	
2755	4822 124 80131	100μF 20% 25V	3747	4822 051 20223	22k 5% 0.1W	
2756	4822 124 40433	47μF 20% 25V	3748	4822 050 21005	1M 1% 0.6W	
2757	5322 124 40641	10μF 20% 100V	3749	4822 117 11503	220Ω 1% 0.1W	
2760	5322 122 32658	22pF 5% 50V	3750	4822 117 11503	220Ω 1% 0.1W	
2761	5322 122 32658	22pF 5% 50V	3751	4822 051 20113	11k 5% 0.1W	
2762	5322 122 32658	22pF 5% 50V	3752	4822 111 50618	82Ω 10% 0.5W	
2763	5322 122 32658	22pF 5% 50V	3753	4822 051 20113	11k 5% 0.1W	
2764	4822 126 13317	10nF 20% 50V	3754	4822 051 20331	330Ω 5% 0.1W	
2765	4822 126 13692	47pF 1% 63V	3755	4822 051 20113	11k 5% 0.1W	
2766	5322 122 32658	22pF 5% 50V	3757	4822 051 20101	100Ω 5% 0.1W	
2767	4822 122 33646	470pF 10% 500V	3758	4822 051 20201	200Ω 5% 0.1W	
2768	4822 126 13196	100nF 10% SMD 25V	3760	4822 051 20479	47Ω 5% 0.1W	
2769	4822 126 13196	100nF 10% SMD 25V	3761	4822 117 11507	6k8 1% 0.1W	
2770	4822 126 13196	100nF 10% SMD 25V	3762	4822 051 20274	270k 5% 0.1W	
2771	4822 121 43693	10nF 100V	3763	4822 051 20109	10Ω 5% 0.1W	
2772	4822 122 33968	1nF 5% 500V	3765	4822 051 20223	22k 5% 0.1W	
2773	4822 126 12267	470pF 10% R(HR) 2KV	3766	4822 050 21005	1M 1% 0.6W	
2774	4822 126 14102	10nF 20% 2KV	3767	4822 051 20223	22k 5% 0.1W	
2776	4822 126 13196	100nF 10% SMD 25V	3768	4822 051 20339	33Ω 5% 0.1W	
2777	4822 252 60127	DSP-201M-C04F	3769	4822 051 20339	33Ω 5% 0.1W	
2778	4822 126 13196	100nF 10% SMD 25V	3771	4822 051 20339	33Ω 5% 0.1W	
2779	4822 252 60127	DSP-201M-C04F	3772	4822 051 20331	330Ω 5% 0.1W	
2780	4822 252 60127	DSP-201M-C04F	3773	4822 051 20339	33Ω 5% 0.1W	
2781	4822 126 13196	100nF 10% SMD 25V	3775	4822 051 20101	100Ω 5% 0.1W	
2782	4822 124 42169	470μF 25V	3776	4822 051 20201	200Ω 5% 0.1W	
2783	4822 124 41634	22μF ELEC 16V	3777	4822 117 11507	6k8 1% 0.1W	
2784	4822 122 33177	10nF 20% 50V	3778	4822 051 20274	270k 5% 0.1W	
2785	4822 126 13196	100nF 10% SMD 25V	3779	4822 051 20102	1k 5% 0.1W	
2786	4822 126 13196	100nF 10% SMD 25V	3780	4822 051 20479	47Ω 5% 0.1W	
2787	4822 126 13196	100nF 10% SMD 25V	3781	4822 051 20109	10Ω 5% 0.1W	
2788	4822 126 13196	100nF 10% SMD 25V	3782	4822 050 21005	1M 1% 0.6W	
2789	4822 126 13196	100nF 10% SMD 25V	3783	4822 051 20105	1M 5% 0.1W	
2790	4822 122 33177	10nF 20% 50V	3784	4822 051 20561	560Ω 5% 0.1W	
2793	4822 126 13196	100nF 10% SMD 25V	3785	4822 051 20562	5k6 5% 0.1W	
2794	4822 126 13196	100nF 10% SMD 25V	3786	4822 051 20102	1k 5% 0.1W	
2795	4822 126 13196	100nF 10% SMD 25V	3787	4822 111 50618	82Ω 10% 0.5W	
2796	4822 126 13196	100nF 10% SMD 25V	3788	4822 117 11503	220Ω 1% 0.1W	
2797	4822 126 13196	100nF 10% SMD 25V	3789	4822 051 20332	3k3 5% 0.1W	
2798	4822 126 13196	100nF 10% SMD 25V	3798	4822 051 20102	1k 5% 0.1W	
			3799	4822 051 20101	100Ω 5% 0.1W	
2794	4822 126 13196	100nF 10% SMD 25V	3801	4822 051 20101	100Ω 5% 0.1W	
2795	4822 126 13196	100nF 10% SMD 25V	3802	4822 051 20101	100Ω 5% 0.1W	
2796	4822 126 13196	100nF 10% SMD 25V	3803	4822 117 12993	0Ω 0.1 100% 0.4W	
2797	4822 126 13196	100nF 10% SMD 25V	3804	4822 051 20102	1k 5% 0.1W	
2798	4822 126 13196	100nF 10% SMD 25V	3805	4822 051 20102	1k 5% 0.1W	
			3811	4822 050 21502	1k5 1% 0.6W	
			3812	4822 116 80548	15k 5% 0.5W	
			3814	4822 051 20008	0Ω JUMP. (SMD)	
			3815	4822 051 20008	0Ω JUMP. (SMD)	
			3816	4822 051 20008	0Ω JUMP. (SMD)	
			3819	4822 051 20331	330Ω 5% 0.1W	
			3821	4822 051 20331	330Ω 5% 0.1W	
			3823	4822 051 20331	330Ω 5% 0.1W	
			3824	4822 157 53519	IND FXD SP0406 A	

The Introduction of CM5800, 21" Monitor

- 0. Functional Block Diagram**
- 1. General Description**
- 2. Description of Circuit Diagram**
 - A.Power Supply / Power Saving Management**
 - B.Horizontal / Vertical Deflection**
 - C.Video board & DDC 1/2B**
 - D.Digital Circuit & Micro-controller**

1.GENERAL DESCRIPTION

The CM5800, 21" is a Digital Controlled Auto-scan Color Display Monitor with high resolution. This monitor can operate at horizontal scan frequencies from 30 to 115 kHz and vertical scan frequencies from 50 to 160 Hz.

This monitor is equipped with an embedded micro-controller which can preset the required modes. The CM5800 provides many functions, such as digital adjustable picture, DDC1/2B, power management, low emission, high immunity ,etc.

This monitor complies with TCO low emission standard and also fulfills TCO'91 automatic power saving requirements. To reduce power consumption less than 15 watts in standby or suspend mode and less than 5 watts in off mod, the monitor also complies with energy star computer program initiated by the EPA.

2.DESCRIPTION OF CIRCUIT DIAGRAM

This description mainly introduces the functions, including power supply / power saving management, horizontal / vertical deflection, video amplifier, micro-controller, etc.

A.POWER SUPPLY / POWER SAVING MANAGEMENT

POWER SUPPLY:

This monitor is designed as switch mode power supply which can operate mains input from 90 VAC to 264 VAC . The power supply uses an IC(L4990) for current mode PWM controller and drives the MOSFET switch directly. The control scheme transforms a switching converter from a voltage source into a multi-output voltage. The control concept is exhibited many desirable properties such as inherent over-load protection, stable and fast system response.

The maximum power consumption is up to 160 watts. A power limiting circuit is added for safety reason.

On main power supply circuit, secondary feedback via an photo-coupler is used to obtain a stable output voltage. The secondary feedback supplies all necessary voltages for deflection and video. On second power supply, voltage stabilizer IC is used to supply the small signals and micro-controller/EPROM.

CM5800 21A BRIEF

POWER SAVING MANAGEMENT:

This monitor can save power consumption while no sync pulses are detected by micro-controller and automatically recover to normal power when sync signals are detected by micro-controller.

During power saving mode , the second power supply still delivers 5V to μ c. The consume power is less than 15 watts during standby / suspend modes, and less than 5 watts during off mode.

B.HORIZONTAL / VERTICAL DEFLECTION

HORIZONTAL DEFLECTION:

The heart of horizontal/vertical deflection controller is TDA4854 which can offer a complete and efficient small signal sync processing for auto-sync monitors. All functions are controlled by I2C bus.

This controller provides sync processing, which can accept separate , composite (H+V) and sync-on-video input signals. A very short setting time after mode change for protection of external power components has been taken.

The TDA4854 provides extensive functions like a flexible SMPS block and a geometry control with facilities ,leading to excellent picture quality. This device also can directly drive the vertical deflection output stage ,the line driver stage , the E/W output stage and the EHT stage. All controls are dc and tracked with the incoming frequencies.

The horizontal deflection is built around the buck converter which makes it possible to combine H-deflection and EHT generator and allows size and E/W correction without influencing EHT. Raster can be adjusted along horizontal direction by VR3551.

Transformer (LOT) generates the required 26.8kV anode voltage.

The adjustable focus (G3) and screen (G2) voltages are internally derived from the anode voltage. Other secondary windings are used to generate the voltages for G1. For 21 inch monitor also provides dynamic focus on G4 to get a good focus performance.(G4 also adjustable).

To guarantee constant EHT over the whole frequency range , the B+ is made tracked with H-frequency by means of a step down converter.

The horizontal size and east/west correction are obtained by varying the voltage of buck converter of the lower deflection a circuit.

Six-capacitors switch and dc controlled linearity coil are designed for optimal screen linearity.

For safety reasons, x-ray protection circuit is included, UC3842 will shut down EHT generator if the anode voltage exceeds a certain value(28.5kV).

This circuit is also used for beam current overload protection . Shut down EHT in case the total beam current exceeds a certain limit to protect both CRT and LOT.

VERTICAL DEFLECTION:

The majority of vertical deflection functions is integrated by two ICs ; TDA4854 and TDA8177.

The TDA4854 takes care of sync polarity correction ,automatic catching and holding of the vertical oscillator ,generation of saw-tooth drive current for vertical output and vertical s-correction ,and generation of a correct V-blanking pulse for video blanking during vertical retrace lines.

The TDA8177 which is a dc-coupled vertical deflection booster with differential input signals is suitable for color monitor. The output stage has thermal and soar protection ,and high linear saw-tooth signal amplification to obtain the required vertical deflection current.

To obtain a fast vertical retrace for non-VGA mode an external flyback supply is used.

C.VIDEO AMPLIFIER & DDC 1/2B

VIDEO AMPLIFIER:

The heart of video circuit is M52742SP. This controller can drive the hybrid post-amp. CR6927 by buffer stage. The video DC level and gain at the cathode will be controlled by the software.

The red , green and blue video signals are amplified and inverted by the post-amplifier to output stage and AC coupled to the CRT cathodes.

Three cut-off adjustments are provided to set the video black level at cathode for all three guns. Also three individual gain adjustments are provided to adjust the white point at maximum swing. Both cut-off and gain controls are digit type control by micro-processor.

For limiting the beam current and preventing the local doming ,the beam current limit will automatically reduce the video swing in case the maximum beam current is exceeded.(ABL adjustment:R3647)

A spot-killer circuit is also added to prevent the CRT spot burn-in when the set is switched off.

DDC 1/2B:

Via SDA, the data about the information of the monitor , including the serial number , production codes ,CRT type and applicable timings are stored in the EEPROM (24IC21). To avoid picture interference ,the reading and writing processes are executed during vertical blanking which is informed by the vertical SYNC.

D.MICROCONTROLLER

GENERAL DESCRIPTION:

The Philips P87C380 u-processor is used to control the monitor. The preset data are stored in EEPROM ST24W08.

CM5800 21A BRIEF

HARDWARE DEFINITION:

a)KEY BOARD

There are one key pad and one rotary encoder at the front of monitor for the OSD control.

- OSD function key:

Push it, to confirm the entrance or exit from the OSD window

- Encoder:

To select or adjust the parameters which are chosen from OSD.

b)OSD will DISAPPEAR and save automatically after non-operation

c) Software will control the DPMS according to the SYNC status.

d)VIDEO PRESET MODES

Pre-set Video Resolution and Sync Polarities

Resolution modes	H frequency	V frequency	H	V
640 x 400	315K	70Hz (VGA)	-	+
640 x 480	31.5K	60Hz (VGA)	-	-
640 x 480	37.5K	75Hz (VESA/75)	-	-
800 x 600	46.9K	75Hz (VESA/75)	+	+
800 x 600	53.7K	85Hz (VESA/85)	+	+
1024 x 768	60.0K	75Hz (VESA/75)	+	+
1024 x 768	68.7K	85Hz (VESA/85)	+	+
1152 x 870	69.0K	75Hz (MAC)	-	-
1152 x 900	71.8K	76Hz (SUN SPARC)	+	+
1280 x 1024	80.0K	75Hz (VESA/75)	+	+
1280 x 1024	91.0K	85Hz (VESA/85)	+	+
1600 x 1200	106.3K	85Hz (VESA/85)	+	+
1800 x 1350	105.45K	75Hz	+	+
1600 x 1200	112.5K	90Hz	+	+
1800 x 1440	112.5K	75Hz	+	+

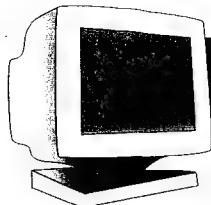


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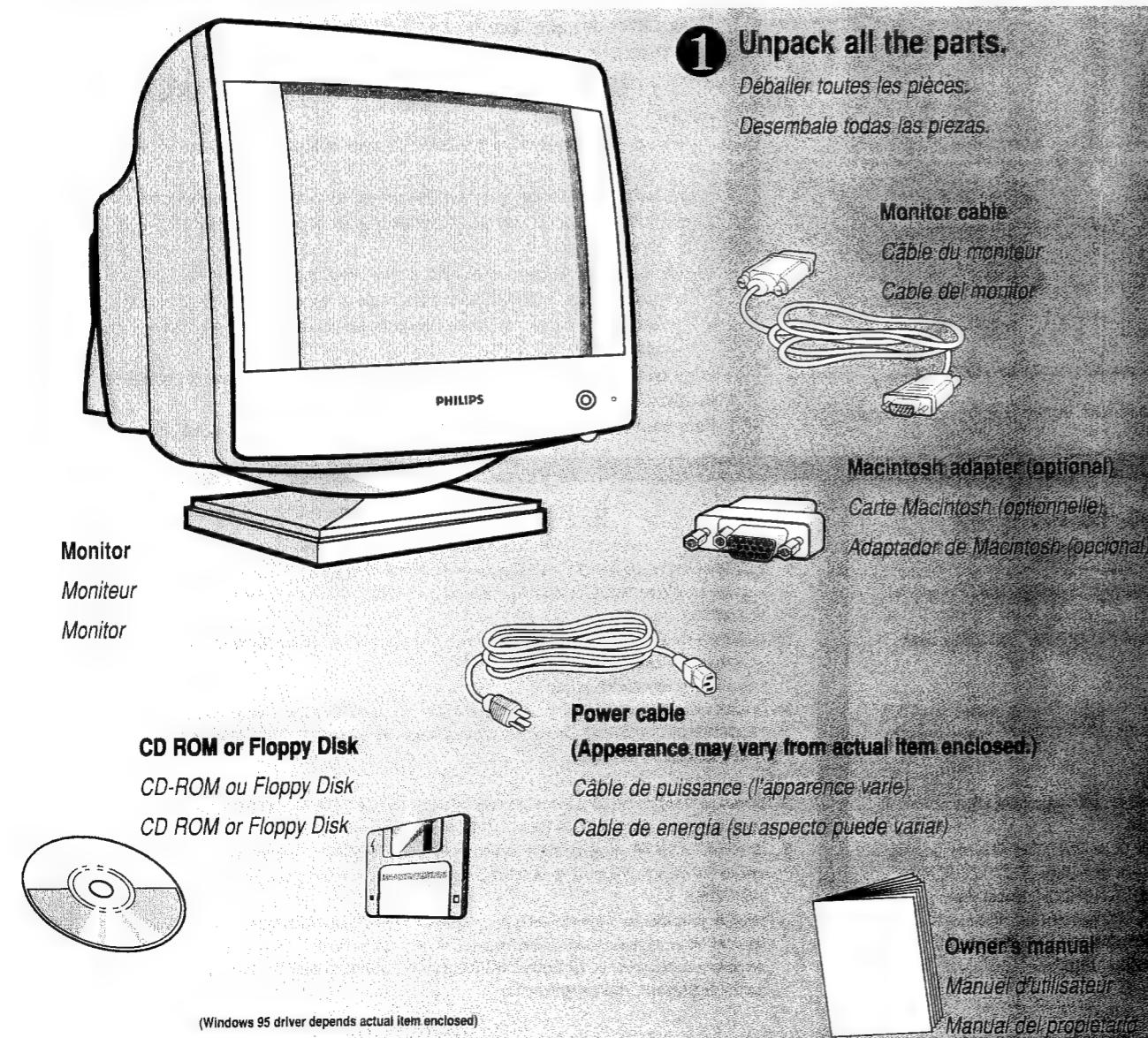
Setting Up your Philips monitor

This foldout is designed to help you use your monitor as soon as possible. Refer to your owner's manual for detailed information. You may also contact us at our web site: <http://www.monitors.be.philips.com>

Ce dépliant est conçu pour vous aider à utiliser votre moniteur du plus vite possible. Consulter votre manuel d'utilisateur pour des informations détaillées. Vous pouvez aussi nous contacter sur notre site Web: <http://www.monitors.be.philips.com>

Esta hoja plegable está diseñada para ayudarle a usar su monitor tan pronto como sea posible. Consulte su manual si desea información detallada. También puede comunicarse con nosotros a través de nuestra página web: <http://www.monitors.be.philips.com>

Because of a policy continuous product improvement, the information mentioned by this documents are subject to change without notice.
Du fait de notre politique d'amélioration constante de nos produits, les spécifications ci-dessus sont sujettes à modification sans avis préalable.
En el marco de la política de mejora continuada de nuestros productos, las especificaciones arriba indicadas están sujetas a cambio sin previo aviso.

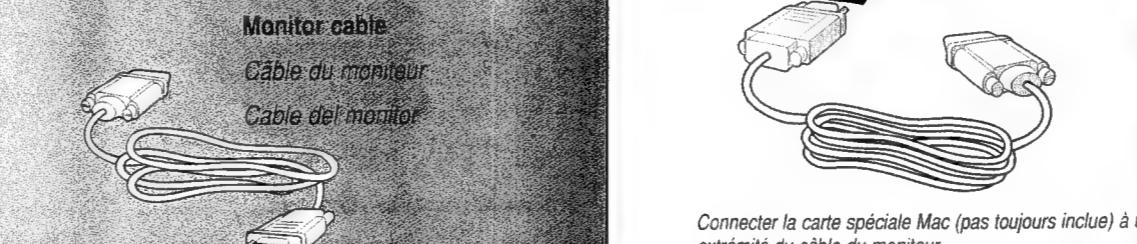


To hook up your monitor to a Macintosh-type computer, follow the steps below. To hook up your monitor to an IBM-compatible computer, follow step 1, then turn over this foldout. In either case, before installing this monitor, please refer to the user's guide of your computer and video adapter to see if this equipment needs any additional setting.

Suivre les étapes suivantes pour connecter votre moniteur à un ordinateur du type Macintosh. Pour connecter votre moniteur à un ordinateur compatible IBM, suivre la première étape, puis tourner ce dépliant. En tout cas, avant l'installation de votre moniteur, veuillez vous référer au manuel d'utilisateur de votre ordinateur et carte vidéo pour voir si cet équipement a besoin d'installation supplémentaire.

Para conectar su monitor a un ordenador tipo Macintosh, siga los pasos que se presentan a continuación. Para conectar su monitor a un ordenador compatible con IBM, siga el paso 1, luego voltee esta página. En ambos casos, antes de instalar este monitor, consulte la guía del usuario de su ordenador y de su adaptador de video, para comprobar si este equipo necesita alguna configuración adicional.

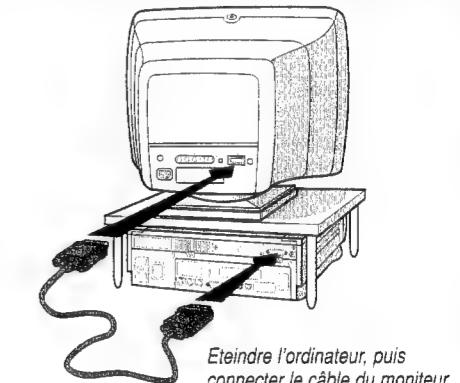
1 Unpack all the parts.
Déballer toutes les pièces.
Desembale todas las piezas.



Connecter la carte spéciale Mac (pas toujours inclue) à une extrémité du câble du moniteur.

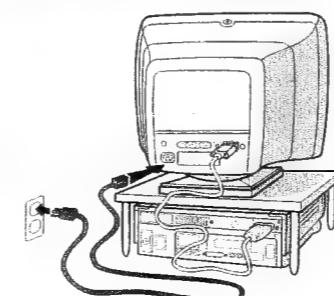
Conecte el adaptador especial de Mac (puede no estar incluido) a un extremo del cable del monitor.

3 Turn off the computer. Then connect the monitor cable.



Apague el ordenador. Luego conecte el cable del monitor.

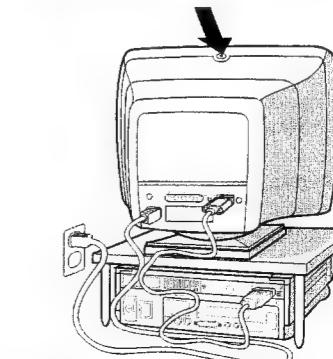
4 Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



Connecter le câble de puissance. S'assurer que la fiche secteur et la prise murale soient facilement accessibles.

Conecte el cable de energía. Verifique que se pueda acceder fácilmente al tomacorriente y al enchufe de pared.

5 Turn on the monitor. Then turn on the computer.



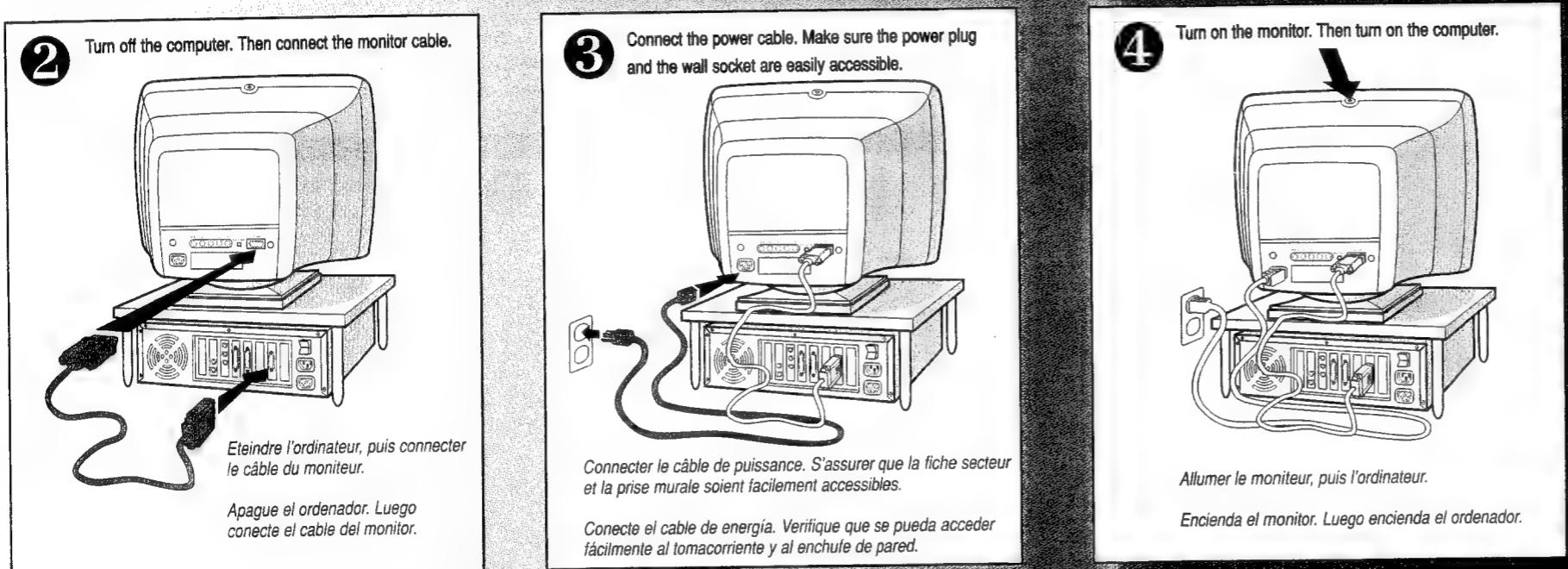
Encienda el monitor. Luego encienda el ordenador.

Setting Up your Philips monitor

IBM-compatible computer hookup continued from step 1 on other side.

Connecter l'ordinateur compatible IBM, suite de la première étape de l'autre côté.

Conexión del ordenador compatible con IBM (continuación del paso 1 del otro lado de la página).



Monitor Model for Windows'95 Driver:
Philips Brilliance 201P (Product ID: 21A58...)
Philips Brilliance 201B (Product ID: 21B58...)

WHAT TO DO IF YOUR MONITOR ISN'T WORKING

Make sure . . .

- . . . the Power cable is plugged in the wall and the rear of the monitor.
- . . . the Power button on top of the monitor should be in the ON position.
- . . . the monitor cable is properly connected to the back of the monitor and the computer.
- . . . to check to see if the monitor cable has bent pins.
- . . . the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17 of the owner's manual for details.

See page 20 of the owner's manual for troubleshooting tips.
For warranty questions, please see your owner's manual.

QUE FAIRE SI VOTRE MONITEUR NE MARCHE PAS

S'assurer . . .

- . . . que le câble de puissance soit branché dans le mur et à l'arrière du moniteur.
- . . . que le bouton Marche/Arrêt au dessus de votre moniteur soit sur MARCHE.
- . . . que le câble du moniteur soit bien connecté à l'arrière du moniteur et de l'ordinateur.
- . . . de vérifier que le câble du moniteur n'aît pas de fiches tordues.
- . . . que l'interrupteur D-Sub/BNC à l'arrière du moniteur soit en position correcte. Voir page 24 et 39 de votre manuel d'utilisateur pour plus de détails.

Voir page 42 du manuel d'utilisateur pour des conseils de dépannage.
Si vous avez des questions concernant la garantie, veuillez consulter votre manuel d'utilisateur.

¿QUÉ HACER SI SU MONITOR NO FUNCIONA?

Verifique . . .

- . . . si el cable de energía está enchufado a la fuente de energía y a la parte posterior del monitor.
- . . . si el botón de alimentación en la parte superior del monitor está en la posición ON.
- . . . si el cable del monitor está debidamente conectado a la parte posterior del monitor y del ordenador.
- . . . que las clavijas del cable del monitor no estén dobladas.
- . . . que el interruptor D-Sub/BNC en la parte posterior del monitor esté en la posición correcta. Si desea más detalles, consulte las páginas 46 y 61 del manual del propietario.

En la página 64 del manual del propietario encontrará consejos sobre la localización de fallas.

Para consultas sobre la garantía, consulte el manual del propietario.

If you have Windows '95 . . .

follow these steps to complete setting up your monitor.

1. Start Windows '95 and install CD ROM supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5a. If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box, and select CD-ROM drive
Or
- 5b. If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows '95 version is different or you need more detailed installation information, please refer to the Windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

Si vous avez Windows '95 . . .

suivez les étapes suivantes pour terminer l'installation de votre moniteur.

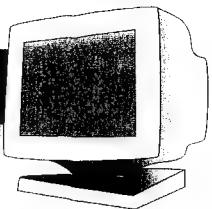
1. Démarrer Windows 95 et installer le CD-ROM fourni avec votre moniteur.
2. Cliquer sur l'icône "DEMARRER", ensuite, cliquer sur l'icône "PARAMETRES", puis cliquer sur l'icône "PANNEAU DE CONFIGURATION".
3. Cliquer deux fois sur l'icône "AFFICHER", ensuite cliquer sur l'onglet "PARAMETRES", puis cliquer sur la boîte de dialogue "PROPRIÉTÉS AVANCEES".
4. Cliquer sur l'onglet "MONITEUR".
- 5a. Si vous avez un ancien ordinateur, cliquer sur la boîte de dialogue "CHANGER". ensuite l'écran "SELECTIONNER UNITE" apparaît. Maintenant cliquer sur la boîte de dialogue "DISQUETTE FOURNIE", et sélectionner le lecteur CD-ROM.
OU
5b. Si vous avez un ordinateur récent, l'écran "SELECTIONNER UNITE" apparaît automatiquement. Cliquer sur la boîte de dialogue "DISQUETTE FOURNIE" et sélectionner le lecteur CD-ROM.
6. Sélectionner "OK" dans la boîte de dialogue "INSTALLER A PARTIR DE LA DISQUETTE". Si le nom du modèle de moniteur Philips est correct, cliquer sur l'onglet "OK" dans la boîte de dialogue "SELECTIONNER UNITE".
7. Cliquer sur l'onglet "FERMER" dans la boîte de dialogue "PROPRIÉTÉS AVANCEES". Si votre version Windows 95 est différente ou si vous voulez des informations plus détaillées sur l'installation, veuillez vous référer au manuel d'utilisateur de Windows 95. **Pour des informations complémentaires sur le moniteur, veuillez vous référer au manuel d'utilisateur.**

Si tiene Windows '95 . . .

sigue estos pasos para finalizar la configuración de su monitor.

1. Inicie Windows '95 e instale el CD ROM que se suministra con su monitor.
2. Haga clic en el ícono "INICIO". Luego haga clic en el ícono "CONFIGURACIÓN". Luego haga clic en "PANEL DE CONTROL".
3. Haga doble clic en el ícono "PANTALLA". A continuación haga clic en la etiqueta "CONFIGURACIÓN" y luego en el cuadro de diálogo "PROPIEDADES AVANZADAS".
4. Haga clic en la etiqueta "MONITOR".
- 5a. Si usted tiene un ordenador viejo, haga clic en el cuadro de diálogo "CAMBIAR". Luego aparece la pantalla "SELECCIÓN DE DISPOSITIVO". Ahora haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.
O
5b. Si tiene un ordenador nuevo, aparece automáticamente la pantalla "SELECCIONAR DISPOSITIVO". Haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.
6. Seleccione "ACEPTAR" en el cuadro de diálogo "INSTALAR DESDE DISCO". Si el nombre del modelo del monitor Philips está correcto, haga clic en la etiqueta "ACEPTAR" del cuadro de diálogo "SELECCIÓN DE DISPOSITIVO".
7. Haga clic en la etiqueta "CERRAR" del cuadro de diálogo "PROPIEDADES AVANZADAS". Si su versión de Windows '95 es diferente o necesita información más detallada acerca de la instalación, consulte el manual del usuario de Windows '95. **Si desea información adicional acerca del monitor, consulte el manual del propietario.**

INTRODUCTION AND SAFETY



Introduction

The Philips Brilliance 201P/201B color monitor displays sharp and brilliant images of text and graphics with a maximum resolution of 1800x1440(201P),1800x1350(201B) pixels. It is optimal for Windows, CAD / CAM / CAE, desktop publishing, spread sheets, multi-media, and any other application that demands a large screen size and high resolutions.

The monitor automatically scans horizontal frequencies from 30KHz to 115KHz(201P),107KHz(201B), and vertical frequencies from 50Hz to 160Hz. With microprocessor-based digital-controlled circuitry and On-Screen Display (OSD) controls, the monitor can automatically adjust itself to the video card's scanning frequency and displays an image with the precise parameters you desire.

Features

- An anti-glare, anti-static, and anti-reflection high-contrast screen coating eliminates any bad effects caused by room light reflecting on and dust attracted to the screen's surface.
- With the Color Adjustment feature, you can easily choose different preset color temperatures or set your own customized color parameters.
- The Image Tilt Adjustment feature corrects a rotated image. This correction minimizes the distortions caused by elements such as the Earth's magnetic field.
- The full-size feature expands the image on the monitor to fill the screen when used in factory preset modes.

- USB Bay at back of monitor is prepared for the Universal Serial Bus hub. You can easily and flexibly connect USB-designed devices – such as a mouse or keyboard – to the monitor for true Plug-and-Play function. USB hub sold separately (optional).

- Green Design – including automatic power saving function (NUTEK) and low-emission compliance (TCO '95) – shows your commitment to the environment.

- DDC1/DDC2B allows communication between the monitor and the PC for optimal video configuration.

- New CrystalClear technology for sharpest high brightness and high contrast

- Moire Cancellation eliminates diffraction, a fringe pattern in the picture.

Note: Your monitor operates according to the VESA DDC Level 1/2B. Only computers that support the same guidelines and operate at the same or a higher level can make use of this feature. If your computer does not support the relevant guidelines, you can still use your monitor and computer. However, you may need to manually specify the appropriate resolution in the computer.

As an Energy Star Partner, Philips has determined that this product meets the Energy Star guidelines for energy efficiency.



Contact us at our web site: <http://www.monitors.be.philips.com>

Safety precautions and maintenance

- Unplug the monitor, if you are not going to use it for an extended period of time.
- Unplug the monitor, if you need to clean it with a slightly damp cloth. Wiping the screen with a dry cloth is okay when the power is off. However, never use alcohol or ammonia-based liquids.
- Consult a service technician if the monitor does not operate normally when following the instructions in this manual.
- The back cover should be removed only by qualified service personnel.
- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- The top of the monitor is not a shelf. Remove any object that could fall into the vents or prevent proper cooling of the monitor's electronics.

- Keep the monitor dry. To avoid electric shock, do not expose it to rain or excessive moisture.
- Keep the monitor away from magnetic objects, such as speakers, electric motors, transformers, etc.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.

End-of-life disposal

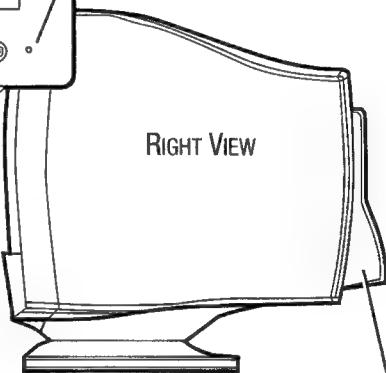
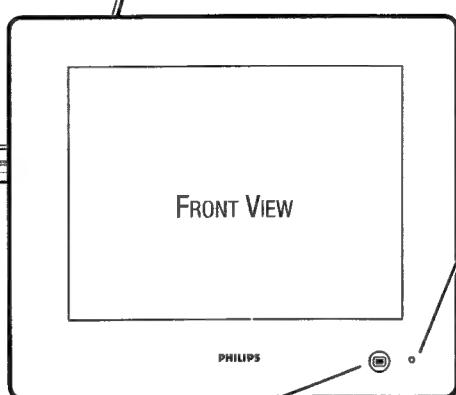
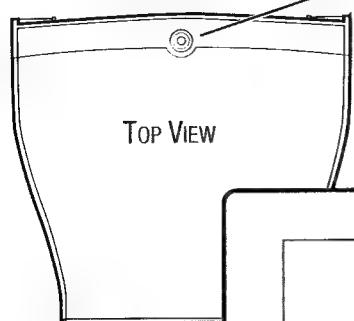
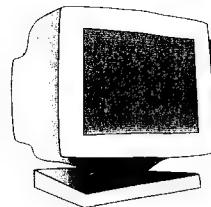
Your new monitor contains materials that can be recycled and reused. Specialized companies can recycle your product to increase the amount of reusable materials and to minimize the amount to be disposed of.

Please find out about the local regulations on how to dispose of your old monitor.

ENERGY STAR is an U.S. registered mark.

As an energy star partner, Philips has determined that this product meets the energy star guidelines for energy efficiency. IBM, IBM PC, and Power PC are registered trademarks of International Business Machines Corporation. Apple, Macintosh, Quadra, Performa, and Centris are registered trademarks of Apple Computer, Inc.

DESCRIPTION OF CONTROLS

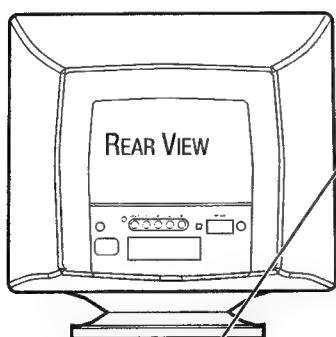


ON SCREEN DISPLAY (OSD) button – Brings up the On Screen Display and helps you navigate through it.

ROTARY Knob – Helps guide you through the On Screen Display. When not used with the OSD button, it adjusts the brightness. See page 12.

LED – Light Emitting Diode turns green when the monitor is on and at full power.

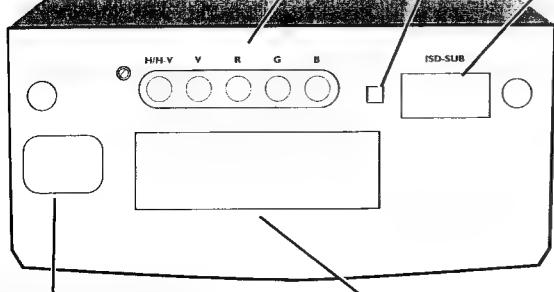
CABLE COVER – Snaps onto the back of the monitor to conceal cable connections. (Cable connections shown in the manual are without the cover on.)



BNC Jacks – Another way of hooking video from the computer to the monitor. See page 16 for details.

D-Sub / BNC Switch – This switch should be in the D-Sub position when using the monitor cable included with the monitor. See page 16 and the foldout for details.

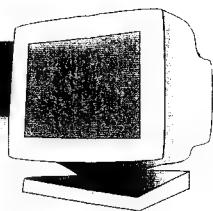
D-SUB Plug – Connect one end of the monitor cable here. See foldout for details.



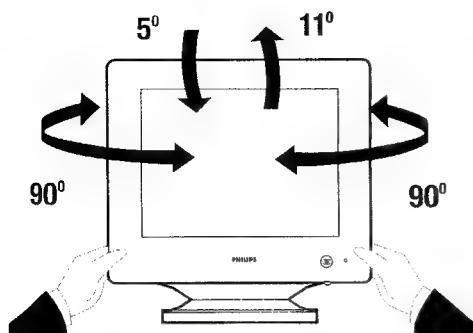
POWER Plug – Plug the power cord in here. See foldout for details.

USB Bay – Slot for plugging in USB Hub. Optional hardware that allows true Plug-and-Play. See page 16 for details.

DESCRIPTION OF CONTROLS

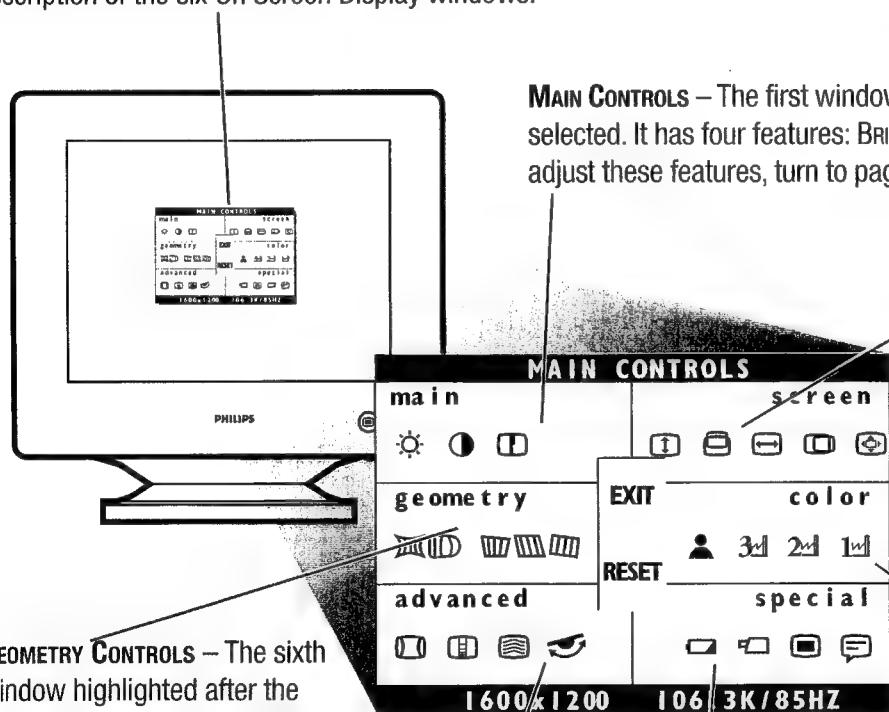


PEDESTAL



PEDESTAL — With the built-in pedestal, you can tilt and swivel the monitor to the most comfortable viewing angle. To best use your monitor, always place it at eye level.

ON SCREEN DISPLAY — Your monitor is preset at the factory. However, you can adjust it using the **ON SCREEN DISPLAY** button and the **ROTARY** knob described on page 2. The way to do so is through the On Screen Display (OSD). Below is a brief description of the six On Screen Display windows.



GEOMETRY CONTROLS — The sixth window highlighted after the OSD has been selected. It has five features: PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, and ROTATION. To adjust these features, turn to page 14.

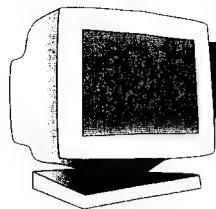
ADVANCED CONTROLS — The fifth window highlighted after the OSD has been selected. It has four features: CORNER CORRECTION, VERTICAL LINEARTY, MOIRE, and ROTARY DEFAULT. To adjust these features, turn to page 12.

MAIN CONTROLS — The first window highlighted after the OSD has been selected. It has four features: BRIGHTNESS, CONTRAST and DEGAUSS. To adjust these features, turn to pages 4 - 5.

SCREEN SIZE & POSITION — The second window highlighted after the OSD has been selected. It has five features: FULL SIZE, HORIZONTAL POSITION, HORIZONTAL SIZE, VERTICAL POSITION, and VERTICAL SIZE. To adjust these features, turn to pages 6 - 7.

COLOR TEMPERATURE — The third window highlighted after the OSD has been selected. It has four features: CAD/CAM, DTP, PHOTO RETOUCH, and USER PRESETS. To adjust these features, turn to pages 8 - 9.

SPECIAL CONTROLS — The fourth window highlighted after the OSD has been selected. It has four features: LANGUAGE, OSD CONTROLS, VIDEO INPUT and POWER SAVING. To adjust these features, turn to pages 10 - 11.
Note: LANGUAGE allows you to change the On Screen Display from English to French, Spanish, German, or Italian. See page 10 for details.

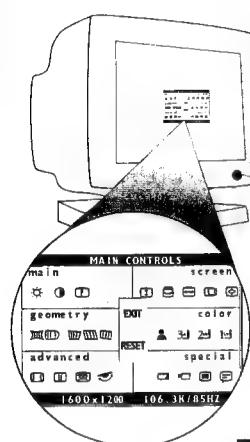


HOW TO USE THE ON SCREEN DISPLAY (OSD)

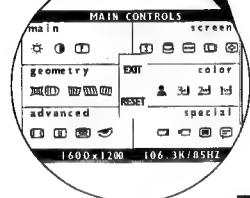
MAIN CONTROLS WINDOW

BRIGHTNESS

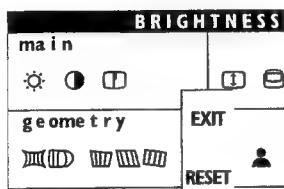
To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness level is recommended.



Press the On Screen Display button.



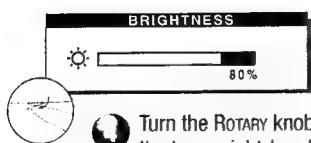
Press the On Screen Display button to highlight BRIGHTNESS icon.



Press the On Screen Display button to return to MAIN CONTROLS window.



Press the On Screen Display button to bring up BRIGHTNESS screen.



Turn the ROTARY knob (at the lower right-hand corner of the monitor) to adjust the brightness.

SMART HELP

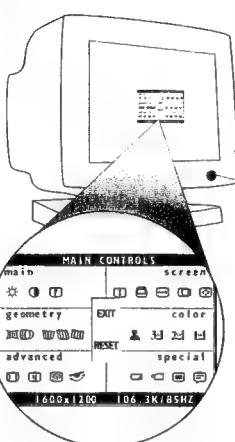
After returning to MAIN CONTROLS ...

... to continue to CONTRAST, turn the ROTARY knob until CONTRAST icon is highlighted. Next, follow steps 3 - 5 under CONTRAST.

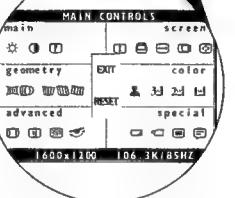
... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

CONTRAST

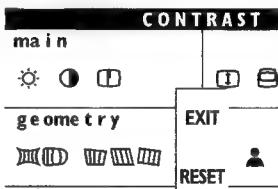
To adjust your screen's contrast, follow the steps below. Contrast is the difference between the light and dark areas on the screen. A 100% contrast level is recommended.



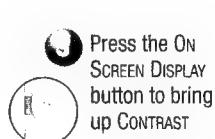
Press the On Screen Display button.



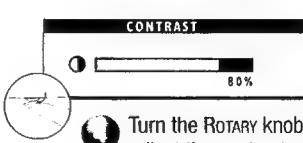
Press the On Screen Display button. Next, turn the ROTARY knob until the CONTRAST icon is highlighted.



Press the On Screen Display button to return to MAIN CONTROLS window.



Press the On Screen Display button to bring up CONTRAST screen.



Turn the ROTARY knob to adjust the contrast.

SMART HELP

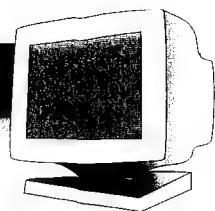
After returning to MAIN CONTROLS ...

... to continue to DEGAUSS, turn the ROTARY knob until DEGAUSS icon is highlighted. Next, follow steps 2-3 under DEGAUSS (on the next page).

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options).

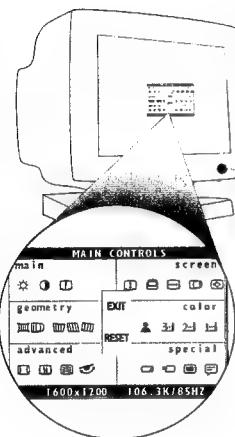
HOW TO USE THE ON SCREEN DISPLAY (OSD)

MAIN CONTROLS WINDOW



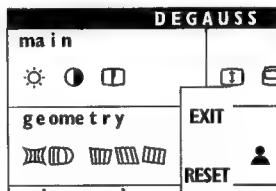
DEGAUSS

To degauss your screen, follow the steps below. Degaussing removes electromagnetic build up that may distort the color on your screen.



Press the On SCREEN DISPLAY button.

Press the On SCREEN DISPLAY button. Next, turn the ROTARY knob until the DEGAUSS icon is highlighted.



For a moment, the screen will be distorted. Then it will return to normal. You will be back at the MAIN CONTROLS window.



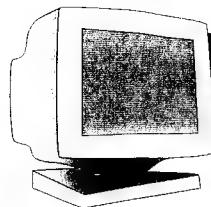
Press the On SCREEN DISPLAY button to degauss your screen.

SMART HELP

After returning to MAIN CONTROLS ...

... to continue to the SCREEN SIZE & POSITION window, turn the ROTARY knob until Exit is highlighted. Next, press the OSD button. Turn to the next page and follow steps 2 - 5 under FULL SIZE.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

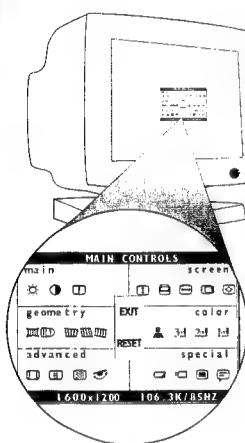


HOW TO USE THE ON SCREEN DISPLAY (OSD)

SCREEN SIZE & POSITION WINDOW

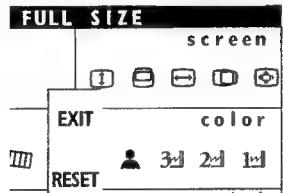
FULL SIZE

Full Size allows you to adjust the image on your screen to its maximum height and width. If nothing happens when you use this feature, the image is already at full size. You can use Full Size to both enable and disable this feature. Note: Full Size only works with the monitor's factory presets.



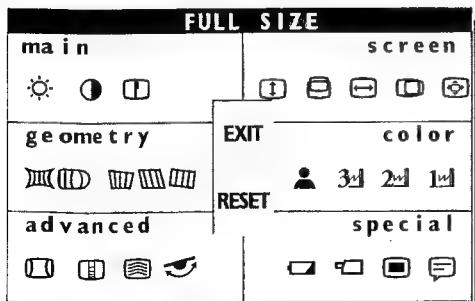
Press the ON SCREEN DISPLAY button.

- 1 Turn the ROTARY knob until the SCREEN SIZE & Position window is highlighted. Next, press the ON SCREEN DISPLAY button. The FULL SIZE icon is highlighted.



The image will automatically adjust to full size. You can now go on to your next adjustment.

Press the ON SCREEN DISPLAY button.



SMART HELP

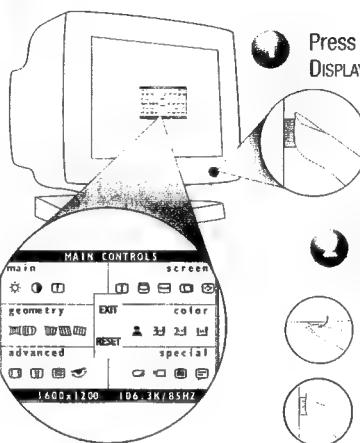
After returning to SCREEN SIZE & POSITION ...

... to continue to HORIZONTAL POSITION, turn the ROTARY knob until HORIZONTAL POSITION is highlighted. Next, follow steps 3 - 5 under HORIZONTAL POSITION.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

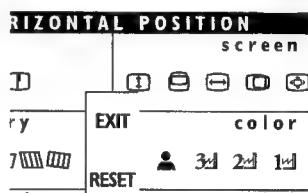
HORIZONTAL POSITION

Horizontal Position shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered.



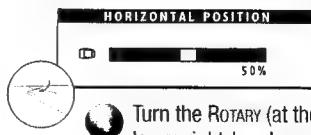
Press the ON SCREEN DISPLAY button.

- 1 Turn the ROTARY knob until the SCREEN SIZE & Position window is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until HORIZONTAL POSITION is highlighted.



Press the ON SCREEN DISPLAY button to return to SCREEN SIZE & POSITION.

Press the On SCREEN DISPLAY button to bring up HORIZONTAL POSITION screen.



- 1 Turn the ROTARY (at the lower right-hand corner of the monitor) knob until the image is horizontally balanced.

SMART HELP

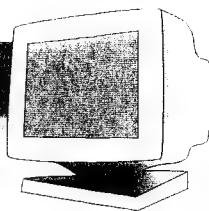
After returning to SCREEN SIZE & POSITION ...

... to continue to HORIZONTAL SIZE, turn the ROTARY knob until HORIZONTAL SIZE is highlighted. Next, follow steps 3 - 5 under HORIZONTAL SIZE (on the next page).

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

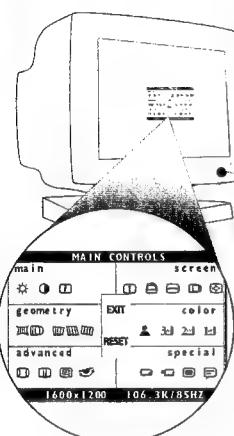
HOW TO USE THE ON SCREEN DISPLAY (OSD)

SCREEN SIZE & POSITION WINDOW



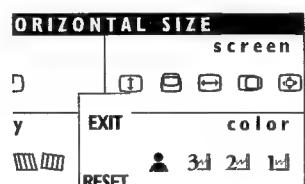
HORIZONTAL SIZE

Horizontal Size expands or contracts the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.



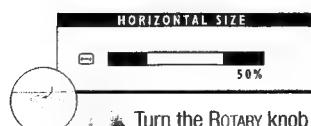
Press the On SCREEN DISPLAY button.

Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until HORIZONTAL SIZE is highlighted.



Press the On SCREEN DISPLAY button to return to SCREEN SIZE & POSITION.

Press the On SCREEN DISPLAY button to bring up HORIZONTAL SIZE screen.



Turn the ROTARY knob (at the lower right-hand corner of the monitor) until the image is the horizontal size you want.

SMART HELP

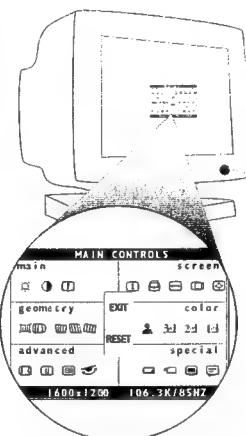
After returning to SCREEN SIZE & POSITION ...

... to continue to VERTICAL Position, turn the ROTARY knob until VERTICAL POSITION is highlighted. Next, follow steps 3 - 5 under VERTICAL POSITION.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

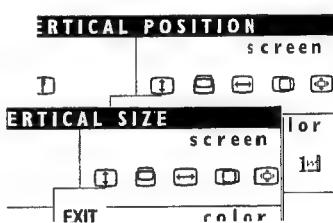
VERTICAL POSITION VERTICAL SIZE

Vertical Position adjusts the image on your screen either up or down. Use this feature if your image does not appear centered. Vertical Size expands or contracts the image on your screen, pushing it out toward the top and bottom sides or pulling it in toward the center.



Press the On SCREEN DISPLAY button.

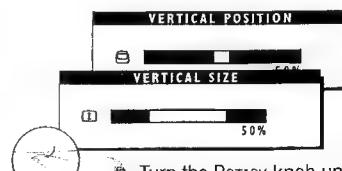
Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until VERTICAL POSITION or VERTICAL SIZE is highlighted.



Press the On SCREEN DISPLAY button to return to SCREEN SIZE & POSITION.



Press the On SCREEN DISPLAY button to bring up VERTICAL POSITION or VERTICAL SIZE screen.



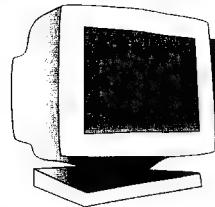
Turn the ROTARY knob until the image is vertically balanced or the vertical size you want.

SMART HELP

After returning to SCREEN SIZE & POSITION ...

... to continue to Color Temperature, turn the ROTARY knob until Exit is highlighted. Next, press the OSD button. Then follow steps 2-4 under COLOR TEMPERATURE WINDOW on the next page.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

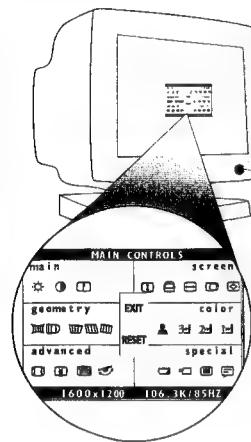


HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

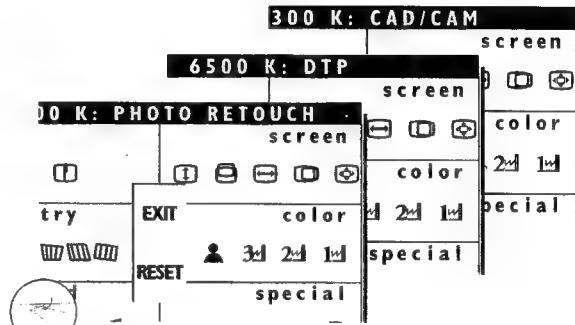
**9300 K CAD/CAM / 6500 K DTP /
5500 K PHOTO RETOUCH**

1st **2nd** **3rd** Your monitor has three preset options you can choose from. One **1st** for Computer Aided Design (CAD) work. Two **2nd** for Desktop Publishing (DTP). And three **3rd** for Photo Retouch. When you select an option, the computer automatically adjusts itself for that selection.



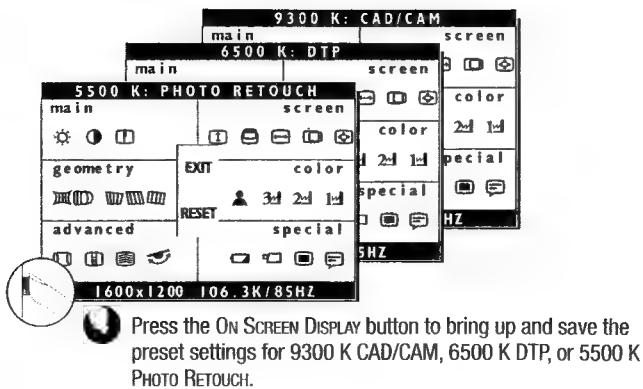
Press the On SCREEN DISPLAY button.

Turn the ROTARY knob until the COLOR TEMPERATURE window is highlighted. Then press the On SCREEN DISPLAY button.



Turn the ROTARY knob until Cad/CAM, DTP, or Photo Retouch is highlighted.

After each preset setting is saved, the on screen display automatically returns to the COLOR TEMPERATURE window. To save the next preset setting, simply repeat the steps listed here.



Press the On SCREEN DISPLAY button to bring up and save the preset settings for 9300 K CAD/CAM, 6500 K DTP, or 5500 K PHOTO RETOUCH.

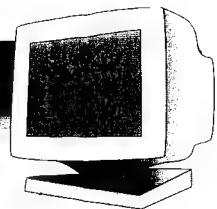
SMART HELP

After returning to COLOR TEMPERATURE ...

- ... to continue to USER PRESETS, turn the ROTARY knob until USER PRESETS is highlighted. Next, follow steps 3 - 9 under USER PRESETS on the next page.
- ... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

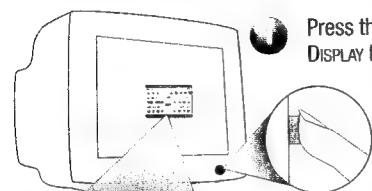
HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

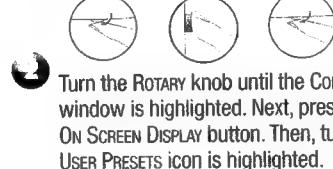
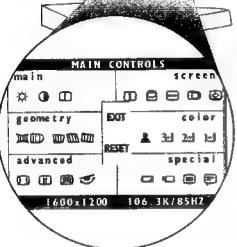


USER PRESETS

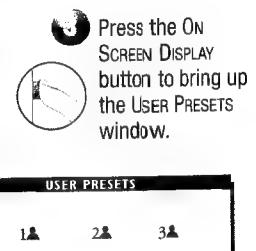
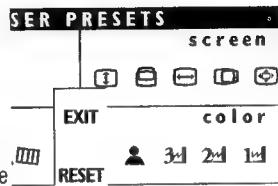
If you need to adjust any of the three preset options (CAD/CAM, DTP, or PHOTO RETOUCH), follow the steps below to modify the colors that appear on your screen. You can make individual adjustments to each of the preset options.



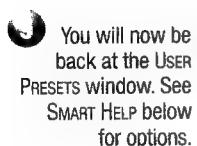
Press the On Screen Display button.



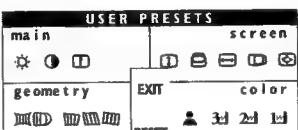
Turn the ROTARY knob until the COLOR window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until USER PRESETS icon is highlighted.



Press the On Screen Display button to bring up the USER PRESETS window.



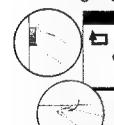
You will now be back at the USER PRESETS window. See SMART HELP below for options.



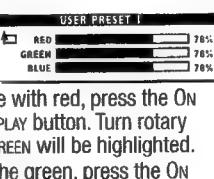
To exit USER PRESET 1, press the On Screen Display button.



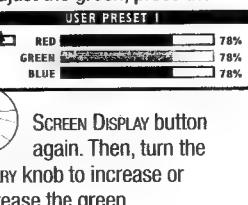
When done with green, press the On Screen Display button. Turn rotary to BLUE, BLUE will be highlighted.



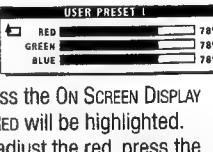
To adjust the blue, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the blue.



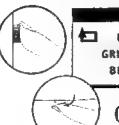
When done with red, press the On Screen Display button. Turn rotary to GREEN, GREEN will be highlighted. To adjust the green, press the On



SCREEN DISPLAY button again. Then, turn the ROTARY knob to increase or decrease the green.



First, press the On Screen Display button. RED will be highlighted. Next, to adjust the red, press the



On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the red.

SMART HELP



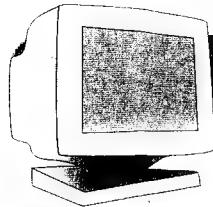
To exit USER PRESETS (step 3 above), turn the ROTARY knob until the Go Back icon is highlighted. Go Back appears by the icon when highlighted. Next, press the On Screen Display button. You will be back at the COLOR TEMPERATURE window.

After returning to COLOR TEMPERATURE ...

... to continue to USER PRESET 2 OR 3, repeat steps 3 through 8, selecting either USER PRESET 2 or USER PRESET 3.

... to continue to SPECIAL CONTROLS window, turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Now, follow steps 2 - 5 under SPECIAL CONTROLS on the next page.

... to exit the On Screen Display completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

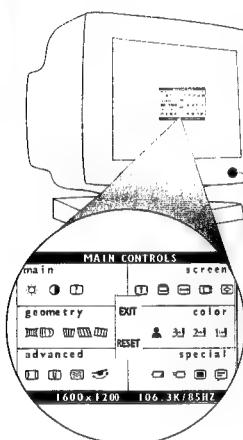


HOW TO USE THE ON SCREEN DISPLAY (OSD)

SPECIAL CONTROLS WINDOW

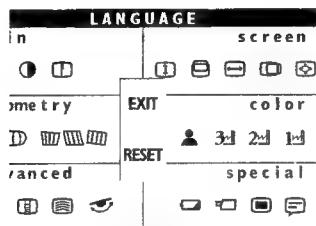
LANGUAGE

The On Screen Display shows its settings in one of five languages. The default is English, but you can select French, Spanish, German, or Italian.



Press the On Screen Display button.

Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Then, press the On Screen Display button to highlight LANGUAGE icon.



Press the On Screen Display button to confirm your selection and return to SPECIAL CONTROLS.

Press the On Screen Display button to bring up LANGUAGE screen.



Turn the ROTARY knob (at the lower right-hand corner of the monitor) until desired language is selected.

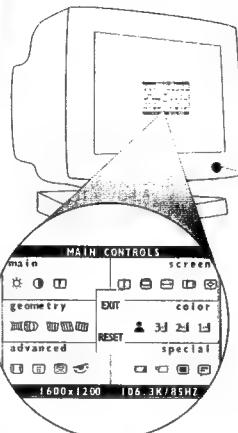
SMART HELP

After returning to SPECIAL CONTROLS ...

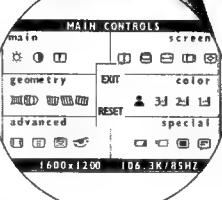
... to continue to POWER SAVING, turn the ROTARY knob until POWER SAVING icon is highlighted. Next, follow steps 3 - 6 under POWER SAVING
... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

POWER SAVING

POWER SAVING helps save energy when the monitor is on but not being used. After a preset time, the monitor will go blank if not being used. To select POWER SAVING, follow the steps below.



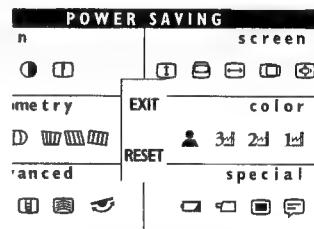
Press the On Screen Display button.



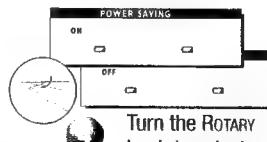
Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the POWER SAVING icon is highlighted.



Press the On Screen Display button to confirm your selection and return to SPECIAL CONTROLS.



Press the On Screen Display button to bring up POWER SAVING screen.



Turn the ROTARY knob to select POWER SAVING ON or OFF.

SMART HELP

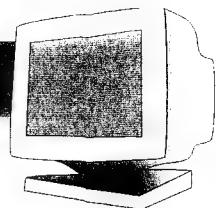
After returning to SPECIAL CONTROLS ...

... to continue to OSD CONTROLS, turn the ROTARY knob until OSD CONTROLS icon is highlighted. Next, follow steps 3 - 6 under OSD CONTROLS

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

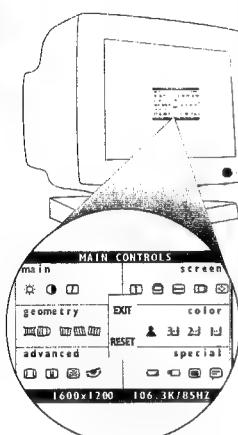
HOW TO USE THE ON SCREEN DISPLAY (OSD)

SPECIAL CONTROLS WINDOW



OSD CONTROLS

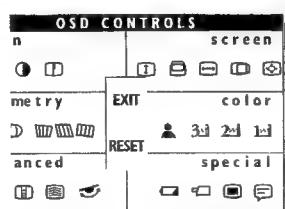
With OSD Controls, you can set the time for the On Screen Display to time out, and change the vertical and horizontal position of the OSD on the monitor screen.



Press the On Screen Display button.

- Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the OSD CONTROLS icon is highlighted.

- Turn the ROTARY knob to select either VERTICAL or HORIZONTAL POSITION and repeat steps 3 - 6.

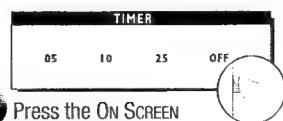


- Press the On Screen Display button to add your change and return to OSD CONTROLS.

- Turn the ROTARY knob to select 05, 10, 25 seconds, or OFF.



- Press the On Screen Display button to bring up OSD Controls screen.



- Press the On Screen Display button to bring up TIMER screen.

SMART HELP

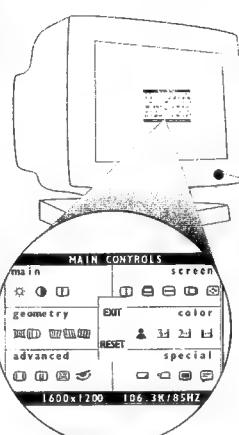
After returning to SPECIAL CONTROLS ...

... to continue to VIDEO INPUT, turn the ROTARY knob until Go Back is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the VIDEO INPUT icon is highlighted. Next, follow steps 3 - 6 under VIDEO INPUT.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

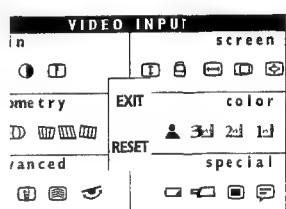
VIDEO INPUT

Video Input helps determine what you see on the screen. It is set at 0.7V(olts), but if the video input signal is different than the output signal, you may want to change it to 1.0V.



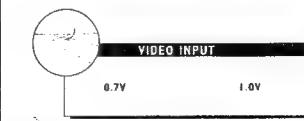
Press the On Screen Display button.

- Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the VIDEO INPUT icon is highlighted.



- Press the On Screen Display button to save your selection and return to SPECIAL CONTROLS.

- Press the On Screen Display button. The Video Input screen appears.



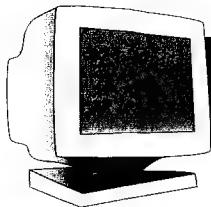
- Turn the ROTARY knob to select either 0.7V or 1.0V.

SMART HELP

After returning to SPECIAL CONTROLS ...

... to continue to ADVANCED CONTROLS, turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob to ADVANCED CONTROLS window and go to the next page.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

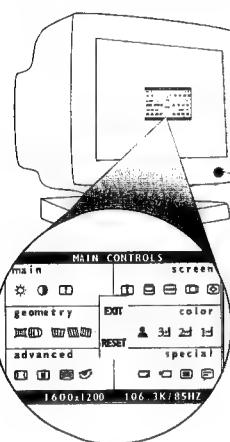


HOW TO USE THE ON SCREEN DISPLAY (OSD)

ADVANCED CONTROLS WINDOW

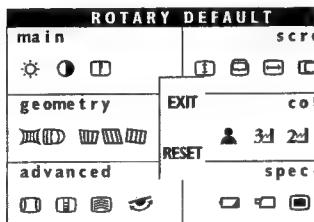
ROTARY DEFAULT

ROTARY DEFAULT allows you to pick the feature your ROTARY knob will default to when not used in adjusting your On Screen Display. The normal default is brightness. To select your ROTARY DEFAULT, follow the steps below.



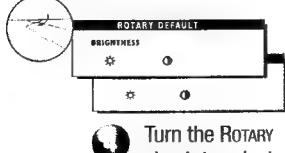
Press the On Screen Display button.

Turn the ROTARY knob until ADVANCED CONTROLS is highlighted. Then, press the On Screen Display button to highlight ROTARY DEFAULT icon.



Press the On Screen Display button to add your adjustment and return to ADVANCED CONTROLS.

Press the On Screen Display button to bring up ROTARY DEFAULT screen.



Turn the ROTARY knob to select BRIGHTNESS, CONTRAST

SMART HELP

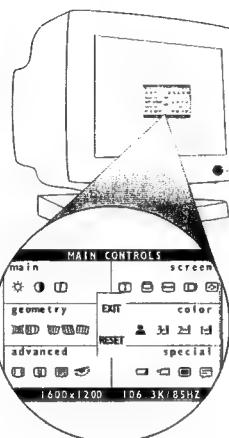
After returning to ADVANCED CONTROLS ...

... to continue to Moire, turn the ROTARY knob until Moire is highlighted. Next, follow steps 3 - 5 under Moire.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

MOIRE

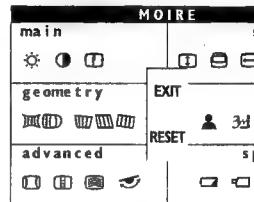
Moire is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your Moire, follow the steps below. Note: Use only if necessary. By activating Moire, sharpness can be affected.



Press the On Screen Display button.

Turn the ROTARY knob until ADVANCED CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the MOIRE icon is highlighted.

Press the On Screen Display button to add your adjustment and to bring up ADVANCED CONTROLS screen. See SMART HELP to select VERTICAL MOIRE or turn MOIRE OFF.



Press the On Screen Display button to bring up MOIRE screen.



Turn the ROTARY knob to adjust the moire.



Turn the ROTARY knob until HORIZONTAL MOIRE is highlighted. Then, press the On Screen Display button.

SMART HELP

...to select VERTICAL MOIRE or to turn Moire off, follow the steps above, selecting VERTICAL MOIRE or MOIRE OFF in STEP 4.

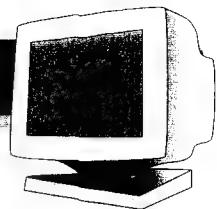
After returning to ADVANCED CONTROLS ...

... to continue to VERTICAL LINEARITY, turn the ROTARY knob until VERTICAL LINEARITY icon is highlighted. Next, follow steps 4 - 5 under VERTICAL LINEARITY (on the next page).

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

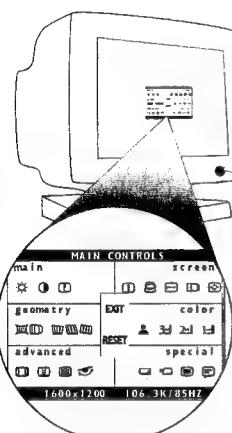
HOW TO USE THE ON SCREEN DISPLAY (OSD)

ADVANCED CONTROLS WINDOW

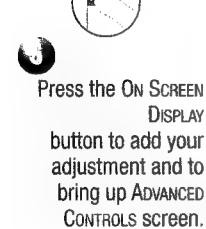


VERTICAL LINEARITY

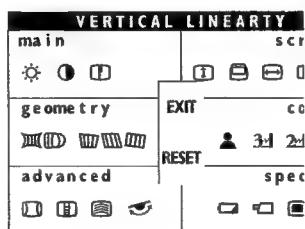
Linearity is the degree with which the actual location of a pixel on the screen corresponds with its intended location. To adjust your VERTICAL LINEARITY, follow the steps below.



Press the On Screen Display button.



Press the On Screen Display button to add your adjustment and to bring up ADVANCED CONTROLS screen.



Press the On Screen Display button to bring up VERTICAL LINEARITY screen.



Turn the ROTARY knob to adjust the vertical linearity.

SMART HELP

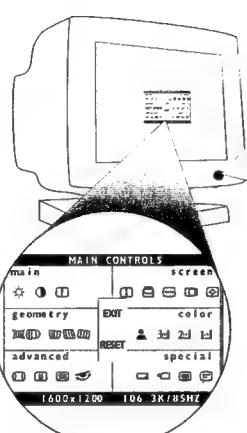
After returning to ADVANCED CONTROLS ...

... to continue to CORNER CORRECTION, turn the ROTARY knob until CORNER CORRECTION icon is highlighted. Next, follow steps 3 - 4 under CORNER CORRECTION.

... to exit completely, press the OSD button and hold for 1.5 seconds. (See page 15 for other exit options.)

CORNER CORRECTION

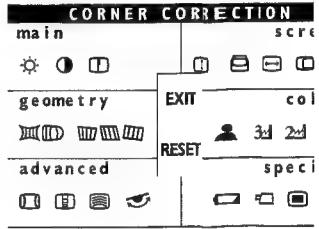
CORNER CORRECTION "squares up" the corners of an image on the screen. To adjust your CORNER CORRECTION, follow the steps below.



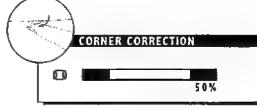
Press the On Screen Display button.



Press the On Screen Display button to bring up ADVANCED CONTROLS screen.



Press the On Screen Display button to bring up CORNER CORRECTION screen.



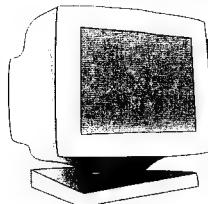
Turn the ROTARY knob until desired corner correction is selected.

SMART HELP

After returning to ADVANCED CONTROLS ...

... to continue to GEOMETRY WINDOW, turn the ROTARY knob until Exit is highlighted. Next, press the OSD button. Then follow steps 2a - 2c under GEOMETRY WINDOW on the next page.

... to exit completely, press the OSD button and hold for 5 seconds. (See page 15 for other exit options.)



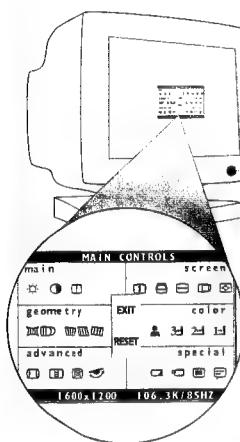
HOW TO USE THE ON SCREEN DISPLAY (OSD)

GEOMETRY CONTROLS WINDOW

PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, ROTATION

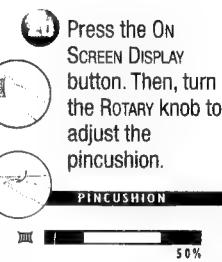
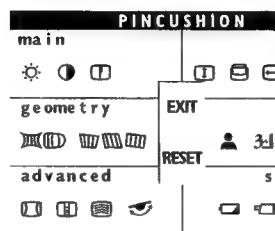


Follow the steps below to adjust any of the five preset options (PINCUSION, BALANCED PINCUSION, TRAPEZOID, PARALLELOGRAM, or ROTATION). You can make individual adjustments to each of the preset options. Note: use these features only when the picture is not square.

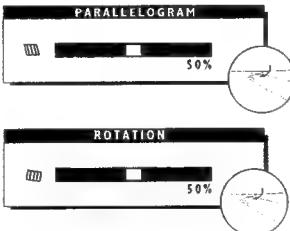


- Press the On Screen Display button.

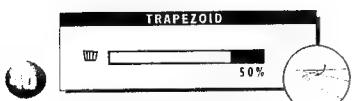
- Turn the ROTARY knob until the GEOMETRY CONTROLS window is highlighted. Next, press the On Screen Display button. Then, if necessary, turn the ROTARY knob until PINCUSION icon is highlighted.



- To select PARALLELOGRAM or ROTATION, turn the ROTARY knob until PARALLELOGRAM or ROTATION icon is highlighted. Next, press the On Screen Display button. Then follow steps 4b and 4c to make the appropriate changes.



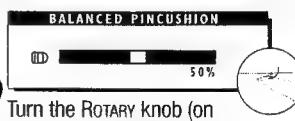
- When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS window.



Turn the ROTARY knob to adjust the trapezoid.

- To select TRAPEZOID, turn the ROTARY knob until TRAPEZOID icon is highlighted. Next, press the On Screen Display button.

- When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS.



Turn the ROTARY knob (on the lower right-hand corner of the monitor) to adjust the balanced pin cushion.

SMART HELP

To exit GEOMETRY CONTROLS ...

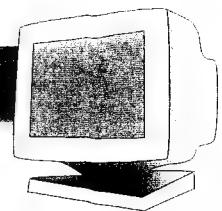
... but continue to another window, turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until that window is highlighted. Now, press the On Screen Display button and follow the instructions for that window.

... completely, press the On Screen Display button and hold for 1.5 seconds. The On Screen Display will disappear. All changes will be saved.

To make changes to one item, follow the steps for that item. Then, follow "To exit GEOMETRY CONTROLS ...".

To return to factory presets, see "To Reset an Individual Window" on page 15.

HOW TO USE THE ON SCREEN DISPLAY (OSD)

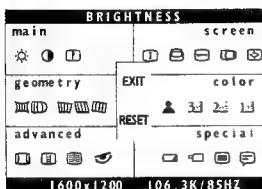


EXIT AND RESET

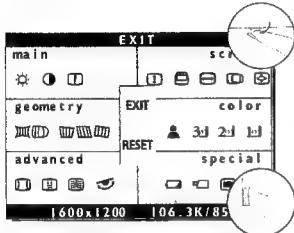
EXIT & RESET FROM A WINDOW

Choosing Exit allows you to go to another window. Choosing Reset returns all the settings in that window to factory presets.

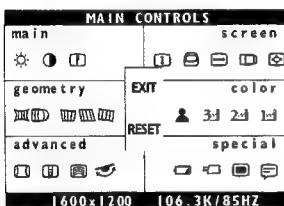
TO EXIT AN INDIVIDUAL WINDOW



Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.

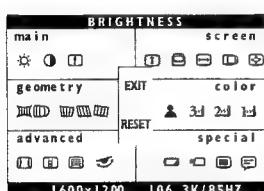


Turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button.

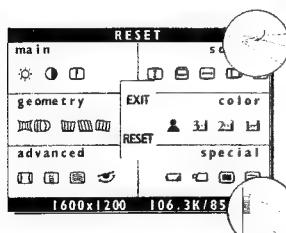


An entire window is now highlighted. Turn the ROTARY knob to another window and begin adjustments, or turn the knob until Exit is highlighted as shown in Exit from OSD (at right).

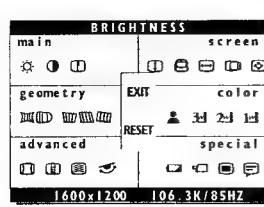
TO RESET AN INDIVIDUAL WINDOW



Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.



Turn the ROTARY knob until RESET is highlighted. Next, press the On Screen Display button.

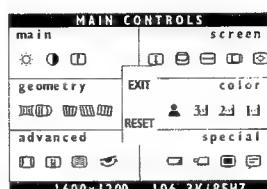


The first icon in the reset window is now highlighted. Turn the ROTARY knob to select another icon and begin adjustments, or turn the knob until Exit is highlighted as shown above.

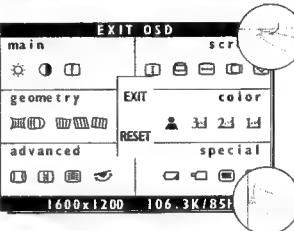
EXIT & RESET FROM THE ON SCREEN DISPLAY

Exiting from the On Screen Display removes the On Screen Display from the monitor screen. Resetting from the On Screen Display returns everything in all the windows to factory presets.

TO EXIT AN ENTIRE ON SCREEN DISPLAY

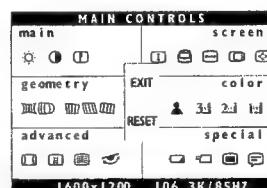


Make sure you have exited from all icons in a window. (See To Exit From An Individual Window.) For example, MAIN CONTROLS will be highlighted.

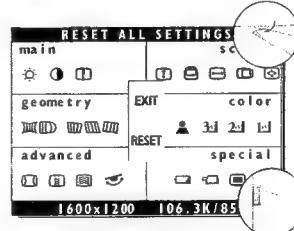


Turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. The On Screen Display will disappear.

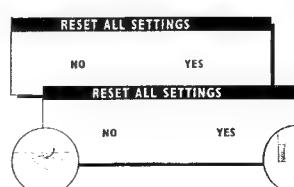
RESET ENTIRE ON SCREEN DISPLAY



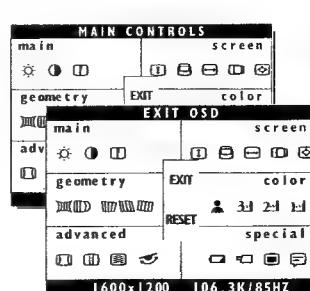
Make sure you have exited from all icons in a window. (See To Exit From An Individual Window.) For example, MAIN CONTROLS will be highlighted.



Turn the ROTARY knob until RESET is highlighted. Next, press the On Screen Display button.

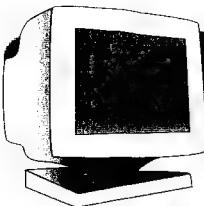


Turn the ROTARY knob to select No or Yes. Then press the On Screen Display button.



If No is selected the On Screen Display appears and MAIN CONTROLS is highlighted.

If Yes is selected the Exit OSD screen appears.



ADDITIONAL HOOK UP OPTIONS

BNC AND USB SET UPS

BNC CONNECTIONS

BNC is another way to connect the monitor to the computer. This connection requires an optional BNC cable. It can be connected to either a Macintosh- or IBM-compatible computer. For those who work with graphics or designs, this option may be better.

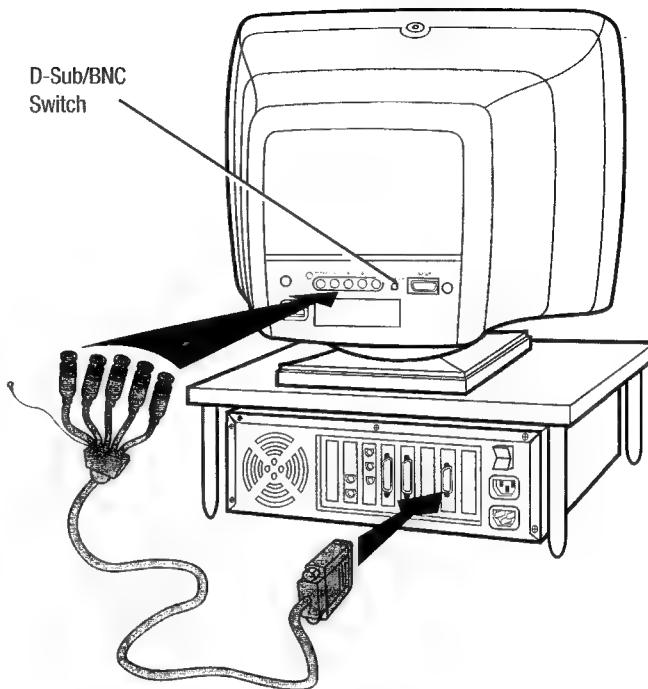
Note: Be sure to flip the D-Sub/BNC switch to BNC when using this connection.

For an IBM-compatible computer:

1. Turn off the computer.
2. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
3. Connect the shielded power cable.
4. Turn on the monitor. Then turn on the computer.
5. If you have Windows '95, follow the "If you have Windows '95" steps on the Setting Up foldout sheet.

For a Macintosh-type computer:

1. Connect the Mac adapter to one end of the monitor cable.
2. Turn off the computer.
3. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
4. Connect the shielded power cable.
5. Turn on the monitor. Then turn on the computer.



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.

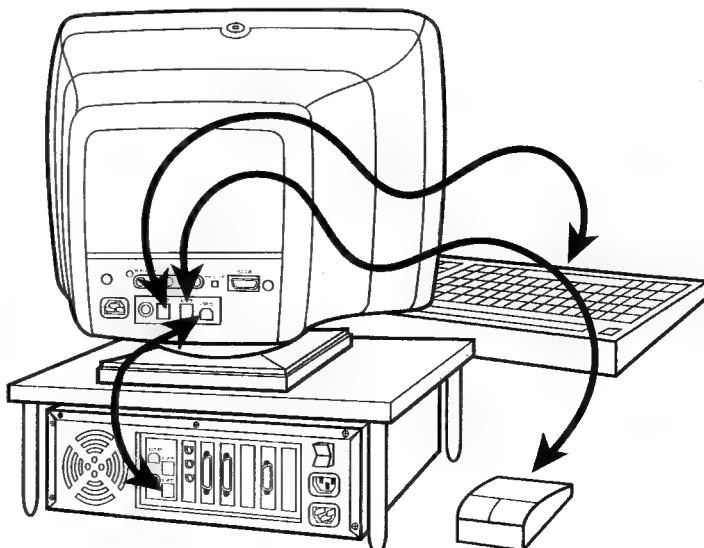
USB CONNECTIONS

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

1. Turn off the computer.
2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
3. Connect the shielded power cable.
4. Turn on the monitor. Then turn on the computer.
5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.

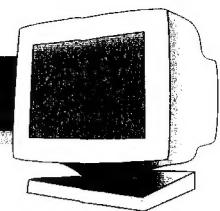
Note: USB Hub and cables sold separately. USB Bay exists in back of monitor.



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.

ADDITIONAL INFORMATION

POWER SAVING FEATURE



AUTOMATIC POWER SAVINGS & PRESET RESOLUTION MODES

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce its power consumption when not in use. If input from a keyboard, mouse, or other device is detected, the monitor automatically "wakes up." The table directly below shows the power consumption and signalling of this automatic power-saving feature. To turn this feature on and off, see page 10. The tables at the bottom of the page show the 13/14 factory preset resolution modes. This leaves room for additions.



Power Management Definition

VESA's mode	Video	H-sync	V-sync	Power used	Power saving(%)	LED color
ON	Active	Yes	Yes	< 160W	0%	Green
Stand-by	Blanked	No	Yes	< 15W	87.5%	Yellow
Suspend	Blanked	Yes	No	< 15W	87.5%	Yellow
OFF	Blanked	No	No	< 5W	95.8%	Amber

This monitor is Energy Star compliant and power management compatible.

AS AN ENERGY STAR PARTNER, PHILIPS HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY.

The proper operation of the function requires a computer with VESA DPMS power management capabilities. When used with a computer equipped with VESA DPMS, the monitor is Energy Star compliant.

201B

Factory Preset Resolution Modes				
MODE	RESOLUTION	H. FREQ. (KHz)	V. FREQ. (Hz)	STANDARD
1	640 x 400	31.5	70	VGA
2	640 x 480	31.5	60	VGA
3	640 x 480	37.5	75	VESA/75
4	800 x 600	46.9	75	VESA/75
5	800 x 600	53.7	85	VESA/85
6	1024 x 768	60	75	VESA/75
7	1024 x 768	68.7	85	VESA/85
8	1152 x 870	69.0	75	MAC
9	1152 x 900	71.8	76	SUN SPARC
10	1280 x 1024	80.0	75	VESA/75
11	1280 x 1024	91.1	85	VESA/85
12	1600 x 1200	106.3	85	VESA/85
13	1800 x 1350	105.5	75	

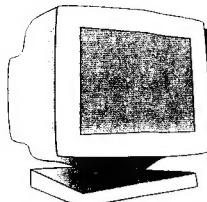
201P

Factory Preset Resolution Modes				
MODE	RESOLUTION	H. FREQ. (KHz)	V. FREQ. (Hz)	STANDARD
1	640 x 400	31.5	70	VGA
2	640 x 480	31.5	60	VGA
3	640 x 480	37.5	75	VESA/75
4	800 x 600	46.9	75	VESA/75
5	800 x 600	53.7	85	VESA/85
6	1024 x 768	60	75	VESA/75
7	1024 x 768	68.7	85	VESA/85
8	1152 x 870	69.0	75	MAC
9	1152 x 900	71.8	76	SUN SPARC
10	1280 x 1024	80.0	75	VESA/75
11	1280 x 1024	91.1	85	VESA/85
12	1600 x 1200	106.3	85	VESA/85
13	1800 x 1350	105.5	75	
14	1600 x 1200	112.5	90	

Unit is capable of up to 1800 x 1440 with user definable modes. 201P/201B Monitors are compliant with EISA standard timing requirements.

ADDITIONAL INFORMATION

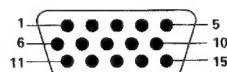
COMING TO TERMS WITH THIS BOOK



PIN ASSIGNMENT

The 15-pin D-sub connector (male) of the signal cable:

Pin No.	Assignment
1	Red video input
2	Green video input
3	Blue video input
4	Identical output - connected to pin 10
5	Self test
6	Red video ground
7	Green video ground
8	Blue video ground
9	No pin
10	Logic ground
11	Identical output - connected to pin 10
12	Serial data line (SDA)
13	H. Sync / H+V
14	V. Sync (VCLK for DDC)
15	Data clock line (SCL)



SPECIFICATIONS

GENERAL

CRT

Screen size	:21" (53.3 cm) flat & square
Viewable Image Size (VIS)	:19.9"
Focusing method	:Dynamic focus
Dot pitch	:0.22 mm (horizontal)
Phosphor	:P22 or equivalent, medium short persistence

Screen treatment

Display area

Factory preset	:380 mm (H) x 285 mm (V)
Maximum usable	:406 mm (H) x 304 mm (V)

Scanning frequency

Horizontal (line)	:30-115kHz(201P) (AutoScan)
	:30-107kHz(201B) (AutoScan)

Vertical (frame)

	:50-160 Hz (AutoScan)
--	-----------------------

Input power

Power consumption	:110 Watt normal, 160 Watt max.
-------------------	---------------------------------

Thermal dissipation

	: (201B) 375.4 BTU normal, 511.9 BTU maximum
	: (201P) 375.4 BTU normal, 546.1 BTU maximum

Input signal

Video	:0.7 or 1.0 Vpp, 75 Ohm impedance
Sync	:Separate sync. TTL level

Pedestal

Tilt	:5° forward, 11° backward
Swivel	:90° left, 90° right

Physical

Unit dimension (WxHxD)	:490 x 529 x 551 mm 19.3" x 21.7" x 20.8"
Net weight	:31.5 kg 69.3 lbs.

Operating conditions

Temperature	:0° C - 40° C 32° F - 104° F
Humidity	:10% - 90%

Storage conditions

Temperature	:-40° C - 60° C -20° F - 140° F
Humidity	:5% - 95%

GLOSSARY

Here are a few definitions that may help you.

Degauss The process by which metal parts of the monitor are demagnetized in order to reduce screen distortion and color impurity.

D-Sub/ BNC Two ways of connecting your monitor to your computer. Your monitor comes with a D-Sub cable. For work with a heavy emphasis on graphics, a BNC cable is recommended.

Geometry A set of controls that allows you to adjust the alignment of the picture on the monitor screen. The goal is to "square up" the picture. This is done by adjusting such items as balanced pincushion, pincushion, parallelogram, rotation, and trapezoid.

Moire A fringe pattern caused by the interference between two superimposed line patterns.

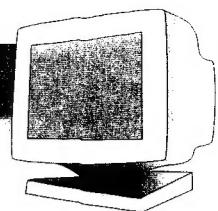
USB Universal Serial Bus. A way to connect your computer, monitor, and peripherals for true Plug-and-Play functions.

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ADDITIONAL INFORMATION

WHAT TO DO IF SOMETHING ISN'T WORKING



TROUBLESHOOTING

Having trouble? Something not working? Before calling for help, try these suggestions.

HAVING THIS PROBLEM?

No Picture
(Power LED not lit)

No Picture
(Power LED is Amber
or Yellow in color)

No Picture
(Power LED is Green
in color)

Screen says



when you turn on
the monitor.

No Color

Color appears blotchy

Missing one or
more colors

Dim Picture

Picture is too large
or too small

Edges of the picture
are not square

Picture has a double
image

Picture is not sharp

Unstable Picture

Windows '95 cannot
find your video card

CHECK THESE ITEMS

Make sure the Power cable is plugged in the wall and back of the monitor.
Power button on top of the monitor should be in the ON position.
Disconnect the monitor from the power outlet for about one minute.

Make sure the computer is turned on.
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 16.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
The Energy Saving Feature may be activated. See pages 12 and 17 for more detail.

Make the Brightness and Contrast controls are set correctly. See page 4 for details
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 16.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
Make sure the computer Power button is on.

Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 16.
Make sure the monitor cable is properly connected to your computer. See Setting Up foldout.
Check to see if the monitor cable has bent pins.
Make sure the computer is turned on

If you are using a non-VESA-DDC standard video card, consult your local Philips dealer or
service organization to obtain an adapter.

The picture may need degaussing. See page 5 for details.
Remove any nearby magnetic objects.
Face the monitor East for best picture quality.

Check user settings of Color Temperature. See pages 8 and 9 for details.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.

Adjust the Brightness and Contrast controls. See page 4 for details.
Check the Video Input selection and switch from 0.7 volts to 1.0 volts or 1.0 volts to 0.7 volts. See page 11.
Check your video card and the manual instructions for it. It may be a non-VESA-DDC Standard card.

Adjust the Horizontal and/or Vertical Size. See pages 7 and 8 for details.

The geometry controls require adjusting. See page 14 for details.

Eliminate the use of a video extension cable and/or video switch box.
Face the monitor East for best picture quality.

Check to make sure Moire is switched off. See page 12.

Increase your refresh rate. Consult your computer manual for details.

Select "Super VGA" under STANDARD DISPLAY TYPES, or contact your video card manufacturer
for the right drivers.

TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with an s by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol s on the schematic diagrams and/or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit may be safely operated without danger of electrical shock.

* Broken line ——————

Implosion

1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

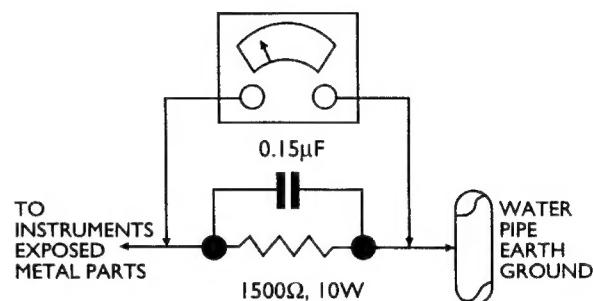
X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an X-radiation problem. High voltage should always be kept at the manufacturer's rated value - no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV reading be recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.

6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.15μF capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 milliamperes. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Picture Tube Replacement

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards.

WARNING: Before removing the CRT anode cap, turn the unit OFF and short the HIGH VOLTAGE to the CRT DAG ground.
SERVICE NOTE: The CRT DAG is not at chassis ground.